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News of the Industry Begins Page 668

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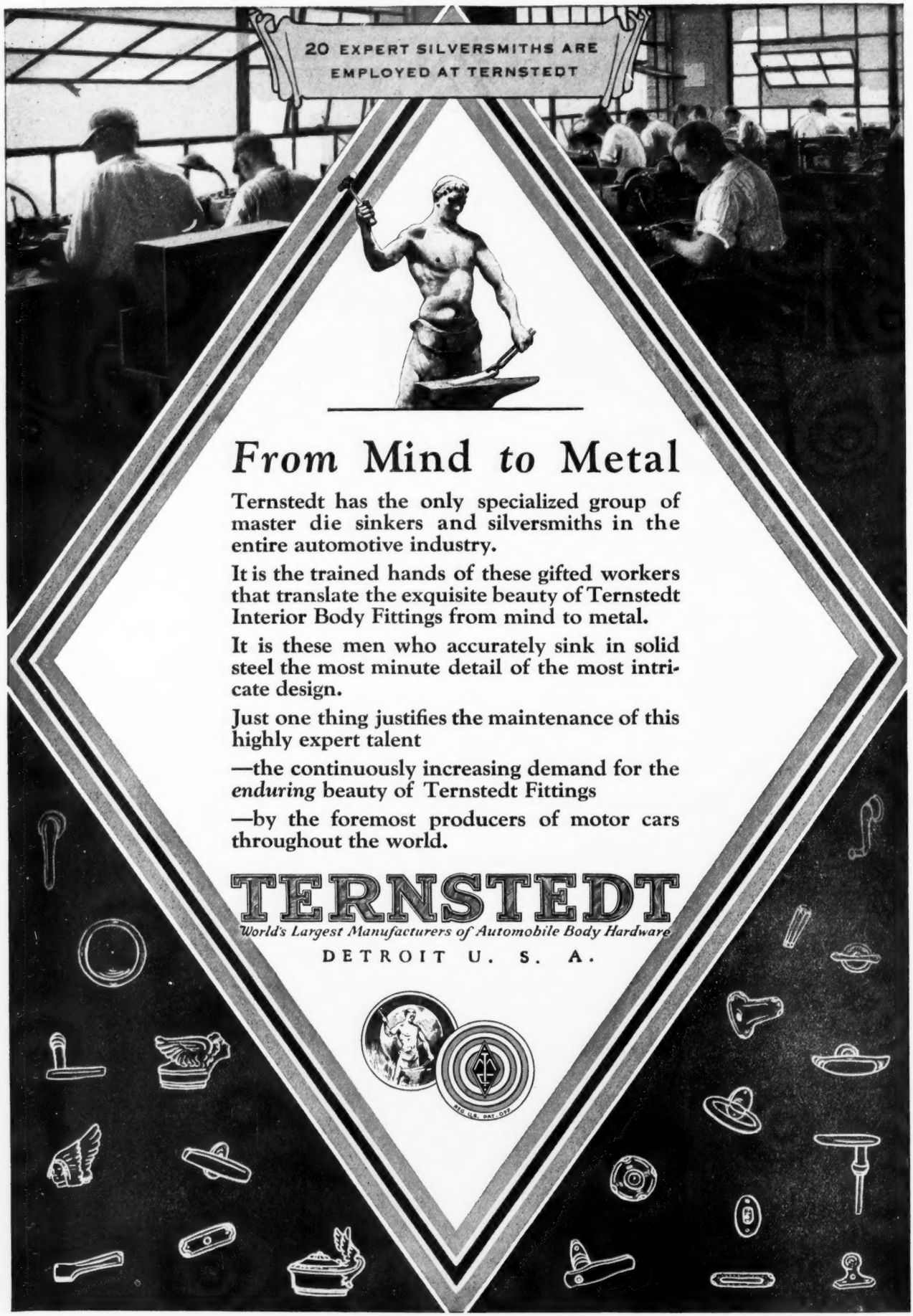

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AUTOMOTIVE INDUSTRIES

VOLUME 55 *Philadelphia, Thursday, October 14, 1926* NUMBER 16

American Characteristics *Prominent in New* European Models

Exhibits at Paris Salon show that foreign engineers are influenced by American practice. Many new sixes introduced. 22 U. S. makes are on display.

By W. F. Bradley

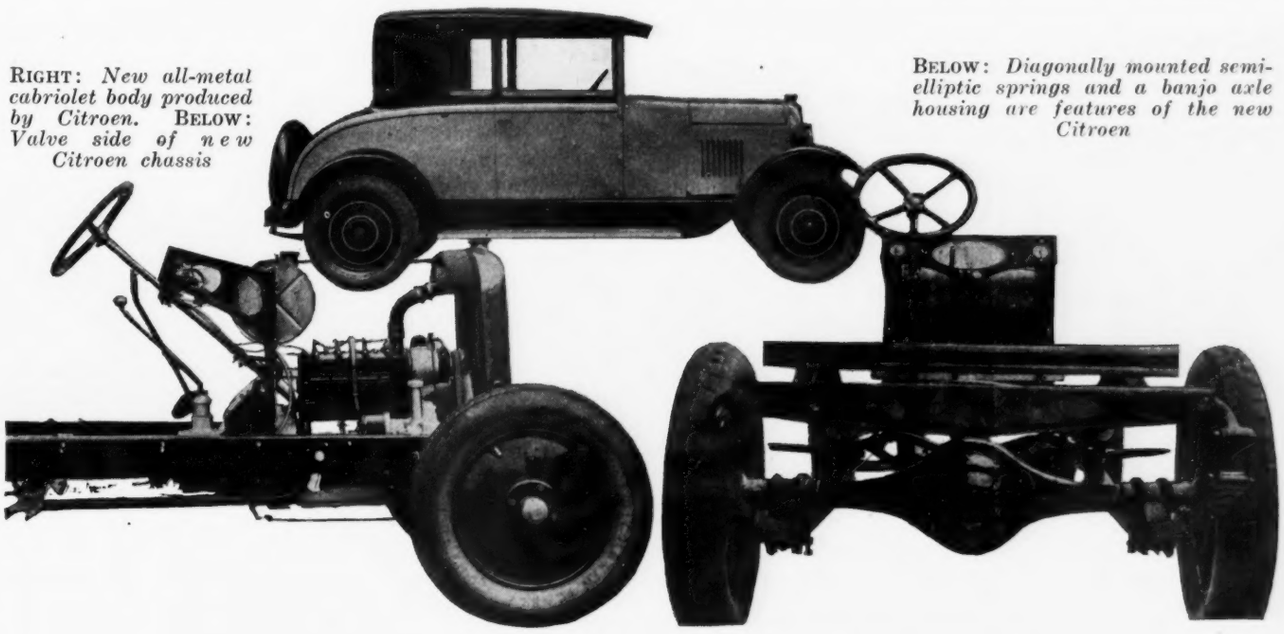
PARIS, Oct. 13 (*by cable*)—With twenty-two car manufacturers, America leads the list of foreign exhibitors at the twentieth Paris Automobile Salon which opened at the Grand Palais in the Champ Elysees, Oct. 7. Italy follows with ten makes, Belgium with six, England with three and Austria and Spain with one each. A greater number of the leaders of the American industry attended the opening of the show this year than ever before.

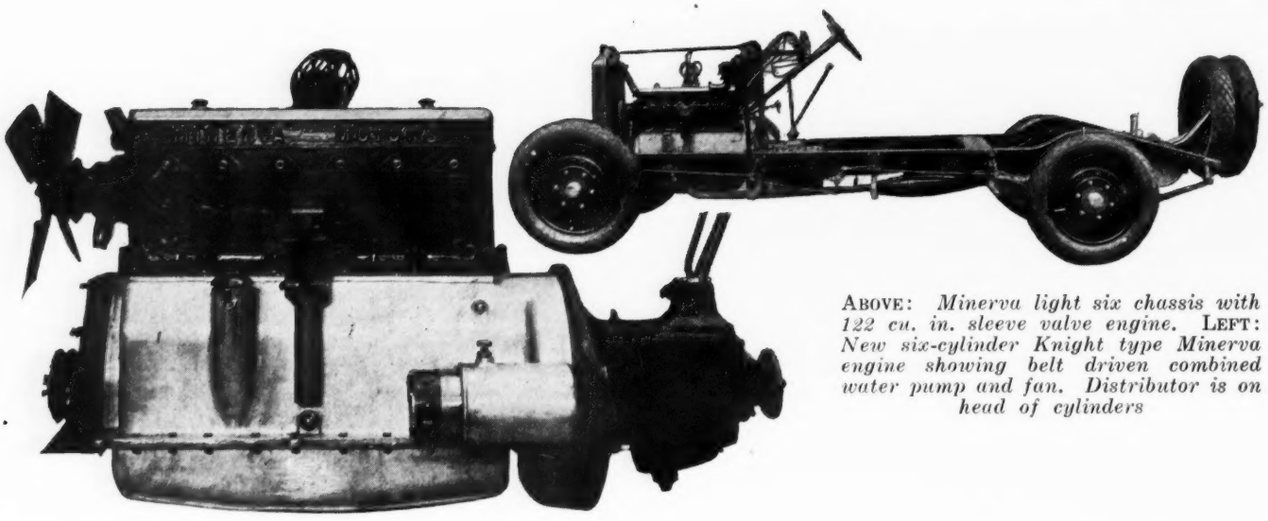
A review of the exhibits indicates that European engineers have been influenced by American practice or by the demands made by European users as a result of having become familiar with American cars. An increased number of six-cylinder models is one of the features of the show. Among the new models exhibited are designs by Voisin, Panhard, Minerva (all with Knight-type engines), Renault, Berliet, Donnet, Zedel, Nagant, Ballot, Alfa-Romeo, Steyr and Irat. Of the foregoing the Renault, Berliet, Minerva, Donnet and Nagant are laid out specially to meet American competition.

There is no new development in eight-cylinder engines, which are built only by Panhard, Isotta-Fraschini and Bugatti. Cars with supercharging engines are built only by small makers in small sporting types. In all big-production jobs the tendency is away from the overhead-valve and toward the L-head type of engine. Experiments made with turbulence type heads of the Ricardo and similar designs have given satisfactory results, and this, combined with the lower

RIGHT: *New all-metal cabriolet body produced by Citroen.* BELOW: *Valve side of new Citroen chassis*

BELOW: *Diagonally mounted semi-elliptic springs and a banjo axle housing are features of the new Citroen*





ABOVE: *Minerva light six chassis with 122 cu. in. sleeve valve engine.* LEFT: *New six-cylinder Knight type Minerva engine showing belt driven combined water pump and fan. Distributor is on head of cylinders*

production cost of the L-head type, has been an important factor favoring its adoption.

Among the distinctive tendencies in design are the greater use of sheet metal pressings in place of aluminum castings and the adoption of air cleaners and oil purifiers. Central chassis lubrication systems, generally of American origin, are beginning to make their appearance. Increased use is made of single-unit electrical equipments, that is, combined generators and starters, and interest in battery ignition is reviving, for both cheap and expensive models.

Voisin has a new Knight six with dry-sump lubrication. There is little development in clutches, transmissions and rear axles in the field of big-production jobs. Constantinesco shows a small two-cylinder, two-stroke car with his torque converter, while Sensaud de Lavaud exhibits his automatic transmission and has six demonstrating cars running, the largest of these being fitted with a Voisin 182 cu. in. sleeve valve engine. The Cotal planetary, magnetic control transmission is demonstrated on various cars, including Fords.

Servo Brakes on Cheap Cars

Four-wheel brakes are fitted on all of the European cars exhibited, and servo mechanisms are gaining in favor, the most popular, apparently, being the Dewandre vacuum type. There are indications that the use of servos will be extended to cheap cars. Citroen announces the adoption of Westinghouse servos for all models.

Duplicate steering as a preventative against shimmy is used by Farman and Cottin-Desgouttes. Solution of the suspension problem is attempted by Farman with light transverse springs in front and rear, supplemented by heavier longitudinal springs and positive linkage of both axles to the frame; and by Cottin-Desgouttes with quadruple rear and single front transverse springs.

Citroen announces a new Budd-built standard sedan at 28,000 and a de luxe type at 30,000 francs, while the standard phaeton lists at 23,500 and the de luxe phaeton at 25,000 francs. The Renault 194 cu. in. six with fabric leather sedan lists at 47,000, the Berliet 110 cu. in. six Weymann sedan at 49,500, the Donnet-Zedel 156 cu. in. six sedan at 48,000, the Overland Whippet sedan at 75,000 and the Erskine six phaeton at 77,000, while the Minerva (Knight) 122 cu. in six is quoted at 37,500 Belgian francs for the chassis only.

The show is practically divided between fabric leather and all metal bodies, the latter being built exclusively by Citroen, whose Budd plant has recently been enlarged to a capacity of 1000 bodies per day. Renault is almost entirely on fabric leather construction. A large gain is shown by the Weymann type, which is now made by thirty-four European manufacturers. Some high-class fabric leather bodies are finished in pyroxylin, giving varied color effects. About eighty per cent of all cars shown are pyroxylin-finished, several French lacquers of this type having been placed on the market recently.

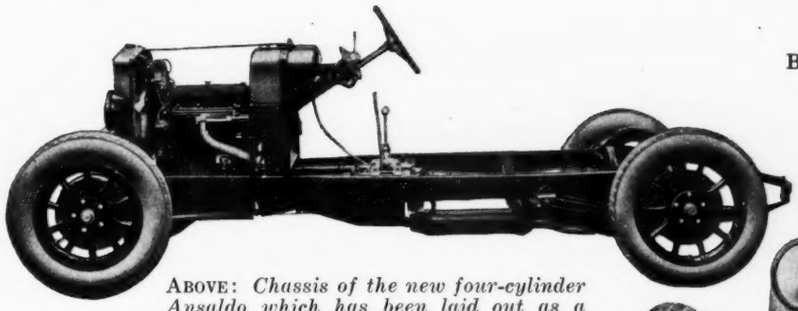
Closed cars have gained considerably. The general practice is to shorten the body to provide for carrying a trunk on a permanent platform, only the spare wheel being overhung. Michelin introduced a straight-side tire, but the majority of the cars are still fitted with the clincher type. Drop center rims are not yet widely used. Two new tire sizes were introduced, viz., 720 by 120 and 850 by 150 mm.

A used car fair and a motor boat exhibition are combined with the Salon this year. H. H. Rice and George Bauer, representing the National Automobile Chamber of Commerce, were invited to attend the meeting of the International Federation of Automobile Manufacturers' Associations to be held on October 14, when the question of the admission of the American and German associations will be discussed.

ADHERING to a one-model policy, Citroen has entirely modernized his car, without, however, departing from the general lines laid down when he entered the automobile business. The bore of his four-cylinder engine has been increased to 70 mm. which with a stroke of 100 mm. gives a piston displacement of 1616 cc. or 98 cu. in. The wheelbase has been extended from 100 to 104 in. and the track is now 48 in.

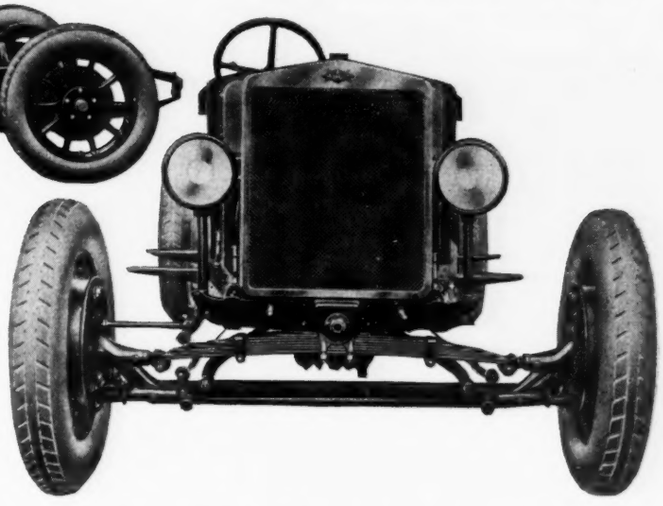
Quarter-elliptic springs have been abolished in favor of semi-elliptic front and rear and a new front axle has been designed to receive front wheel brakes. Citroen cars with front brakes have been on the market for some time, but this was only a temporary model introduced while the permanent type of front axle was being prepared. This season marks Citroen's definite entry into the four-wheel brake class.

Citroen is the only maker in France producing Budd all-metal bodies. Among the new models is a two-door coach with a trunk mounted on a permanent platform at the rear of the chassis and the spare wheel outside



ABOVE: *Chassis of the new four-cylinder Ansaldo which has been laid out as a big production job*

BELOW: *Front view of Ansaldo chassis, showing the transverse front suspension*



the chassis. According to an announcement just made, the new models will be sold in France at 25,000 francs with four-passenger phaeton body and 30,000 francs with four-door sedan body. The old models are being continued, the price being 20,500 francs for the phaeton and 24,000 for the sedan.

The new Citroen chassis is being built as a 1200 lb. light truck, and also with heavier frame and lower gear ratio as a one-ton truck. Two types of creeper track machines are also being marketed with the passenger car engine. One of these is designed for use as a tractor and the other for fast passenger service.

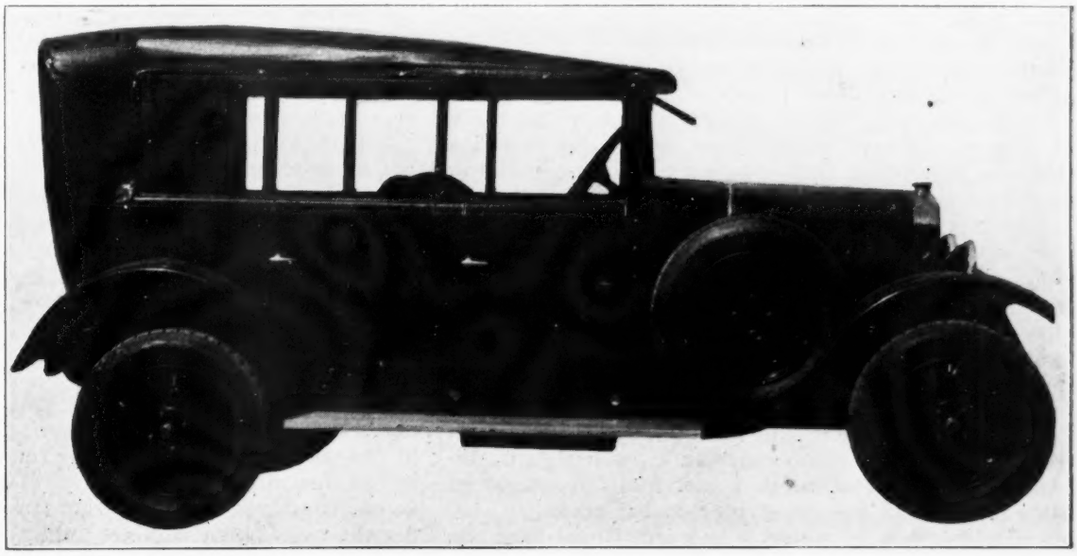
All-purpose bodies, designed especially to meet the requirements of French agricultural classes, are a feature of the Peugeot line. A four-passenger four-door open body, built on a chassis having a wheelbase of 106 in., has a folding fabric leather top, side windows in quick-detachable narrow frames and a rear panel hinging down, so that when seat and back rest have been removed the whole of the rear portion of the car is available for receiving freight.

A fabric leather two-door sedan has been treated in the same way. The rear panel is hinged along the bottom, the upper portion rolls up, and seat and back rest can be taken out, thus leaving the entire rear of the car free for farm produce. A broad central strip on the roof is detachable, this having been done both to increase the usefulness of the car for carrying big loads and to make the vehicle more airy in summer. When closed up there is nothing to indicate that this car is not a normal fabric leather sedan.

The adoption of a light six, having a piston displacement of 110 cu in. and a return to the L-head type of engine are the features of Berliet's policy for next year. This firm has one overhead valve engine, and although there is no intention of withdrawing it immediately, the technical and commercial departments of the Berliet Company are convinced that the L-head type is the more satisfactory job.

Detachable Ricardo Head

Bore and stroke of the new six are 62 by 100 mm. (2.44 by 3.93 in.). It has a detachable Ricardo head, mounted on a cast-iron cylinder block cast with the upper part of the crankcase. The crankcase is mounted in four plain bearings and the oil pan is a sheet steel stamping. A Link-Belt chain is used for driving the camshaft, while the water pump is placed inside the forward part of the cylinder water jacket and is driven by a one-piece belt from a crankshaft pulley. The radiator fan is mounted on the pump shaft. Standard equipment comprises a North-East generator, with coil and battery ignition, but the engine has been laid out with a magneto platform and this can be fitted, if desired, by taking the drive from an extension of the



Peugeot six-passenger, all-purpose phaeton. Rear panel can be hinged down and rear seat and back rest lifted out for freight carrying

generator shaft. The carburetor is a Zenith fitted with an American air cleaner. An oil purifier of Berliet's own make is mounted on the forward face of the dashboard.

With a wheelbase of 120 in. and a track of 51 in., the chassis offers no outstanding features of design. Tires are 740 by 140 mm., which is a new size just about to be introduced by Michelin.

A bigger six cylinder model, of 85 by 120 mm. (3.34 by 4.72 in.) bore and stroke is being built on the same general lines as the smaller car, but is not intended to be produced in the same big quantities. The 249 cu. in. engine has a seven bearing crankshaft, but in other respects is similar to the smaller model, and the main difference in the chassis, apart from dimensions, is to be found in the addition of servo brake.

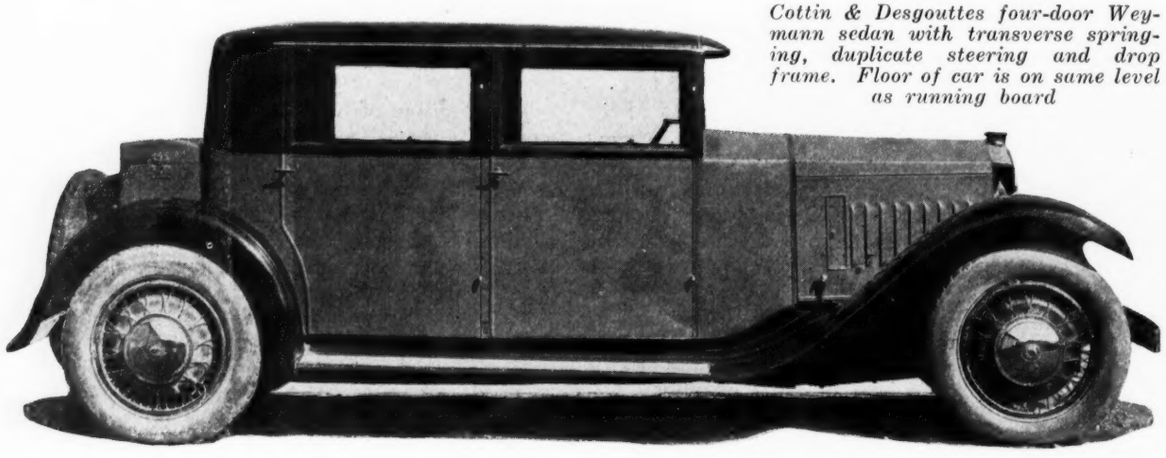
A new L-head 65 by 112 mm. engine has been produced for fitting into an existing chassis having an overhead valve engine. This, and the small six are expected to be the big selling lines of this firm. Wheelbase of the big production four is 110 in. with a track of 51 in., tire size is 730 by 130 and the standard rear axle ratio is 5.2 to 1. This gives a road speed of 47 m.p.h. with the engine running at 2400 r.p.m. With the smaller overhead valve engine, the final gear ratio was practically 6 to 1 and engine speeds ran up to 4000 r.p.m. It is understood that experience has pointed toward a lowering of engine speeds in view of the present class of buyers, both in France and abroad.

A six-cylinder engine of 194 cu. in. piston displacement, to be mounted in two chassis, one of these being a cheap production type and the other having more refinements and intended to sell at a higher price, constitutes the main feature of Renault's new policy.

The engine is an entirely new design and embodies certain departures from Renault's previous practice, but the chassis offer few changes, the cheaper of the two being practically the same as the one now on the market with a four-cylinder engine. Cylinders and upper half of crankcase are in one casting, the bore and stroke are 75 by 120 mm. (2.95 by 4.72 in.), valves are on one side and the head is detachable, whereas previous Renault models all had a fixed head. The crankshaft is carried in four bearings, the camshaft is driven by chain, and a cross shaft operates the magneto. In accordance with the firm's general policy, cooling is by thermo-syphon, with a flywheel fan. Instead of sheet metal valves, a cast iron fan is used on this model, with the object of reducing noise.

Lubrication is by pressure and centrifugal force, an unusual feature, so far as a cheap production car is concerned, being the fitting of an oil radiator at the front of the car, just under the combined generator and electric starter. Rods are of forged duralumin and aluminum pistons are used. Renault fits his own careburetor, which is a duplex type with a single float chamber; one carburetor feeds the three forward cylinders and the other the three rear ones. Exhaust and intake manifold are in one piece, with a hot spot at the head of the vertical branch of the intake passage. The gas tank is at the rear, with a vacuum tank on the dash containing about two gallons.

It is understood that this engine has been designed to assure a wide range of performance on high, rather than to give a high maximum speed. Compression ratio is 5 and the peak of the power curve is reached at 2800 r.p.m. Attachment to the frame, the side rails of which are straight and narrow, is by means of four forged hangers; a sheet metal pan fills up the space between engine and frame. The popular model is fitted with a leather faced cone clutch, but the more expensive type of chassis will have a single plate clutch.



Cottin & Desgouttes four-door Weymann sedan with transverse springing, duplicate steering and drop frame. Floor of car is on same level as running board

Renault's present big production jobs are a couple of fours, one of these being 58 by 90 mm. (58 cu. in.) and the other 75 by 120 mm. (129 cu in.). The former has not been changed mechanically, but the latter now has a detachable cylinder head, thus making all the production jobs similar in this respect, and it has had its wheelbase lengthened to receive 7-passenger bodies.

American presses recently having been installed, all the big production models are now equipped with crowned fenders. A pyroxylin paint plant has been laid down, but this method of painting has not yet been applied to all models.

Double steering, quadruple transverse suspension and a low chassis line, bringing the floor of the car to the level of the running boards, or only 7 in. from the ground, are the outstanding features of a car just produced by the Cottin & Desgouttes Co., of Lyons. According to Engineer Joseph, who is responsible for the design, the riding qualities have been improved to such an extent that the new car is 10 miles an hour faster than the previous model over runs of 250 to 300 miles. This comparison is made, of course, with cars identical so far as engine, gear ratios and weight are concerned, the higher average being attained entirely by the ability to keep going over rough roads.

The side rails of the new Cottin & Desgouttes have a considerable upsweep in front, to give clearance under the engine, and they are united by two main cross

members, one being at the extreme rear and the other immediately behind the drop. Riveted to the two cross members are a couple of longitudinal members, forming a central tunnel within which the drive shaft is carried. A flat sheet metal underpan is attached to the bottom flanges of the side rails, thus forming two long lockers having a depth equal to the height of the frame, and made use of for carrying tools. No external tool boxes are required.

Spicer Universal Joints

The differential housing is bolted to the rear face of the rear cross frame member, which latter is cut away for the drive shaft to pass through. This differential housing is a normal type containing a spiral bevel gear, and from it project two transverse drive shafts with Spicer universal joints. Two very broad and flexible transverse springs are clipped to the top of the housing, in the same horizontal plane, the distance between them being about 5 in., and two other springs are mounted in the same way under the differential housing. A forged eye being bolted to the end of each main leaf, the two upper springs are united by a short shaft and the two lower springs are connected in the same way. This allows the two pairs of springs to be pivoted to the upper and the lower ends of a housing in Alpax metal containing the wheel bearings and carrying the fixed hub.

The brake drums are on the differential shafts, close to the housing, this position having been adopted to reduce unsprung weight.

At the front of the chassis there is a channel section cross frame member having the shape of a very open V. Within the channel there are two forged housings each containing a very heavy cylindrical block of rubber, and on the end of each side rail there is a forged piece terminating in a stud, onto which the rubber bushed cross frame member is fitted. With rubber washers in front and behind, this gives a complete elastic mounting. The cross frame member has to be drilled to allow of the nuts being screwed on the studs, but this opening is covered by a cap.

The upper portion of the sliding pivot is made dust proof by a closed tube screwed on the head and forming a support for the fender. The lower portion, between the spherical guide and the steering knuckle, is protected by an expansible leather gaiter. There is a steering arm on each knuckle, but they are not united by a tie rod.

The suspension of the two front wheels being independent, it was decided to maintain this independence in the steering gear, with the result that not only is greater security obtained—for should one gear break the car could be controlled through the opposite gear—but all tendency to shimmy has been removed.

Two main steering levers are provided, one of these (on the right) being mounted direct and the other (left hand) being on an extended shaft with bearings on the forward face of the aluminum dashboard. The two levers have to move in opposite directions and this inverse movement is obtained by a crank and connecting rod mechanism, as shown in the drawings. The steering is screw-and-nut type and has the advantage of providing duplicate control with a single mechanism.

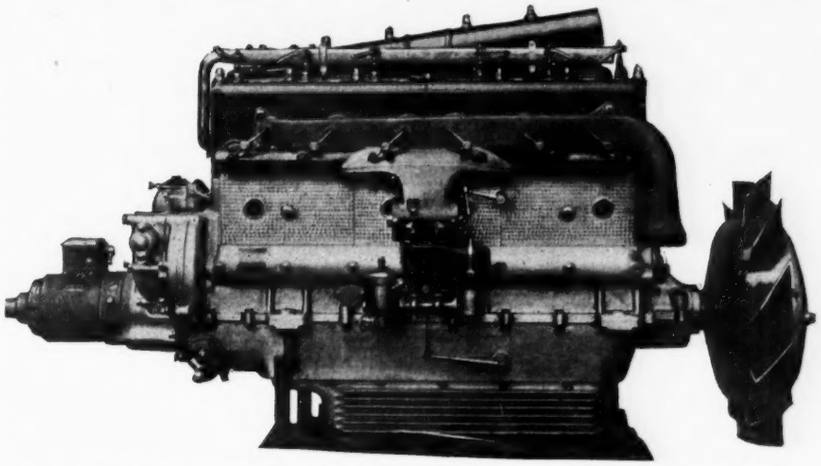
One of the most pleasing features of this car is the ease with which it can be entered. Four wide doors are provided; by reason of the frame construction the running boards can be kept free of obstructions and there is a single step in. Total height is reduced 8 inches without any diminution of head room.

Engine, clutch and gearbox form a unit with three-point attachment to the frame, heavy rubber blocks being used at these points. The engine is practically the same as that employed on previous Cottin & Desgouttes models, being a four-cylinder of 80 by 130 mm. (3.1 by 5.1 in.) with a five bearing shaft, a detachable head and vertical valves with pushrod operation.

Rather unusual for an engine of this size is the use of a single unit electric generator and starting motor on the front end of the crankshaft. As a starting motor it operates at 24 volts, and as a generator at 12 volts. Two 12-volt batteries are fitted. The wheelbase is 150 in. and the overall length, including the bumper in front and two spare wheels at the rear, is 202 in. The track is 59 in. at the rear and 57 in. in front.

A six-cylinder Knight type engine of 68 by 92 mm. (122 cu. in.) is an entirely new model uncovered by the Minerva Co. at the Paris show. This small six marks a distinct departure for the Minerva Co., and may be taken as an example of the general European tendency towards a greater number of cylinders than four whenever the piston displacement exceeds 120 cu. in.

With a wheelbase of 118 in., 56 in. track, and a body length of 98 in., the chassis has a permanent trunk rack on the rear and an overhanging support for two disk type spare wheels, shod with 775 by 145 mm. balloon tires. Suspension is by semi-elliptic springs front and rear, width being 2 in. and length 36 in. for the front pair and 56 in. for the rear set. Double Hartford shock absorbers at the rear and single Hartfords in front are standard equipment.



Renault 40 hp. 6-cylinder L-head engine with oil purifier and oil cooler

The Minerva engine has its cylinders in one casting, mounted on an aluminum crankcase, with a seven bearing crankshaft machined out of the solid billet. The sleeves are of cast-iron, having a stroke of 22 mm. (.86 in.) operated by a chain-driven eccentric shaft. Both the connecting rods and the links from the concentric shafts to the sleeves are I-section. Ricardo die-cast aluminum pistons are fitted.

Forming a unit, the engine and gearbox have three-point attachment to the chassis. Clutch is single-plate

type, and the transmission, which has ground gears, provides three speeds ahead and reverse. A banjo-type pressed steel axle housing is used, with a standard gear ratio of 5.5 to 1. The car has Hotchkiss drive, with two metal universal joints, the drive shaft being carried in ball bearings ahead of and behind the pinion.

Perrot brakes, with 12 in. drums front and rear, are operated through a Dewandre vacuum servo mechanism. S. K. F. taper roller bearings are used for the front wheels and steering. The chassis is designed for either right-hand or left-hand steering, the levers being in the centre in both cases.

Italians Make Few Changes

Italian makers are introducing very few changes in their models. Isotta-Fraschini continues to specialize on a straight eight of 95 by 130 mm. (449 cu. in.), built in two chassis types, normal and sports. Front wheel brakes are continued, with the addition of the Dewandre vacuum servo mechanism. Isotta-Fraschini exports 80 per cent of its production.

Itala now is in regular production on a 122-in. six-cylinder, high grade chassis designed by Engineer Cappa. This chassis made its first appearance two years ago at the Paris Salon, but was then merely an advance sample model. Before it could be put into production the old models had to be thrown out and the entire factory reorganized.

The Itala is particularly interesting as an example of advanced European design. The six cylinders, of 65 by 100 mm. (121 cu. in.) are an aluminum casting with cast-iron liners and have a detachable iron head receiving two inclined valves operated by push rods and rockers from a camshaft in the aluminum crankcase. The spark plugs are inclined in the head and together with the valves are enclosed by the aluminum cover. There is no direct oil lead to the overhead valve gear, lubrication being entirely provided for by the oil mist carried up through the passage ways for the pushrods.

The crankshaft is carried in seven bearings; connecting rods are tubular, with two bolts, and the piston pin floats in the aluminum piston which has two compression rings at the top and two scraper rings at the bottom of the skirt. The external diameter of the piston between the upper and lower rings is reduced two or three millimetres, so that only the top and bottom lands come in contact with the cylinder walls.

Celoron Camshaft Pinion

Celoron is used for the camshaft pinion. A bolted-on cover plate on the side of the crankcase gives access to the camshaft bearings, the pushrods, and also makes it possible to examine the connecting rod bearings. The Itala engine is a high speed type, giving its maximum power at 3700 r. p. m.

The most important change in the chassis since this car was introduced is the adoption of a servo mechanism for the four-wheel brakes. This is an Itala friction type assembled as a complete unit and mounted in the rear compartment of the combined aluminum clutch and gearbox housing. The application of the four brakes being by pedal and lever, through the servo mechanism in both cases, a free wheel device has had to be incorporated to make the brakes effective when the car is running backwards.

Except in such details as piston design and carburetor setting, the Fiat 7 hp. Model 509 chassis has undergone no change. Although having a wheelbase of 100 inches, all the models produced up to the present have been of the two-door type, with access to the rear compartment by hinging forward one of the front seats. A new phaeton introduced at the Paris show, however, has four doors. Four main body types, comprising sedan, runabout, cabriolet and phaeton, are built in Fiat's own shops.

With the exception of this light car and one high-grade six, all Fiat models are L-head type, embodying Ricardo design. On the 10-15 hp. model the Ricardo head has provided an additional 6 hp. and has made it possible to increase the track to 55 in. and to lengthen the wheelbase to 108 in., without any loss of performance, despite the increased weight. Front wheel brakes with a self-wrapping mechanism in the front drums and balloon tires have been made standard equipment. On the new models two spare wheels are mounted in wells on the front fenders, the bodies have four doors and there is a permanent trunk rack at the rear.

Similar mechanical changes have been made in a 140 in. four-cylinder model and a 210 cu. in. six-cylinder, thus making the three models uniform in design. The biggest and most costly of the Fiat models is an overhead valve pushrod type six of 85 by 140 mm. (290 cu. in.) which, when first introduced, had rear suspension by cantilever springs, with a single leaf from the axle to the end of the frame member to prevent transverse swaying. Regular semi-elliptics are now used. This model does not have the self wrapping type of brake shoe, but is fitted with a hydraulic servo mechanism. Changes have been made in the design of this to allow of a quick stop when the car is running at low speed in traffic. Straight side tires have been made standard equipment.

Four Ansaldo Models

Second in importance to Fiat, the Ansaldo Company is in production on four models: a 122 cu. in. six-cylinder, a 120 cu. in. four-cylinder, a 112 cu. in. four cylinder and an entirely new model, laid out with a view to economical production, having a four-cylinder engine of 82 cu. in. piston displacement.

All models are overhead camshaft type, but the newest and smallest is distinctive in having separate engine and gearbox, a transverse front spring and making extensive use of steel stampings where aluminum castings are used on the other models. The wheelbase of this car is 109 in., with a track of 55 in. and 28 by 4.95 in. tires on drop center rims.

A subframe composed of two heavy steel tubes, the ends of which are carried on cross frame members, receives the engine and the transmission, there being a fabric universal joint between the two units and two metal universal joints on the open drive shaft.

Cylinders are cast with the upper half of the crankcase; the head is detachable, with valves operated by an overhead camshaft driven by helical gears at the front end. The water pump is at one end of a cross shaft and the electric generator at the other end. The distributor is on the head of the vertical shaft driving the camshaft. The use of a transverse front spring is a departure from usual Italian practice.

PRODUCTION by United States automobile manufacturers of their own glass for their cars has caused a considerable slump in the glass manufacturing industry in Czecho-Slovakia, where the decline has been approximately 50 per cent in the last year, a report to the Department of Commerce states. Previous to the past year, 30 per cent of the production of Czecho-Slovakian factories was imported by this country.

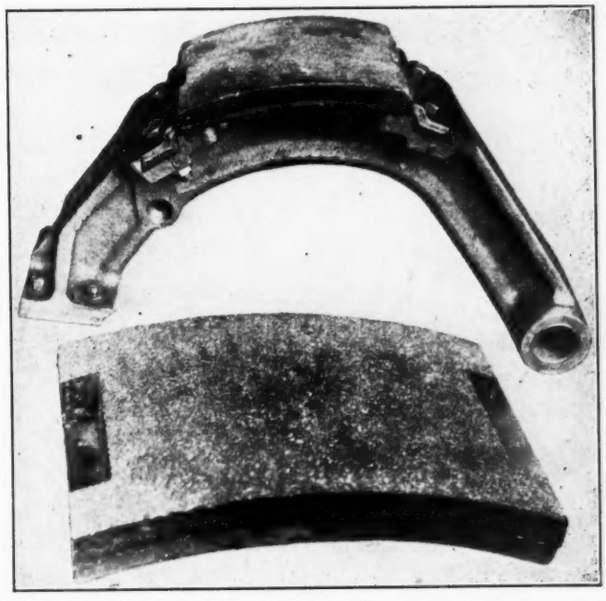
Brake Heat Dissipated More Readily With New Friction Element

Composition blocks developed by American Brake & Foundry Co. cover only 20 per cent of drum circumference. Severe tests on air-braked bus show durability and smooth stopping qualities.

FOR a considerable period the engineering department of The American Brake Shoe & Foundry Co., which has long been an important factor in the railway field, has been engaged in the development of a new friction element for motor vehicle brakes, and a subsidiary known as The American Brake Materials Corp. has been organized to place it upon the market.

The new material is a composition of heat resistant and friction elements, molded with a binder under high pressure into blocks which are secured to the brake arms by mechanical means as shown in the accompanying illustration. The material contains no cotton and no metal, and it is claimed for the blocks that they will resist high temperatures without undue wear and without loss of their frictional properties.

Heretofore it has been the practice to cover 60 per cent or more of the interior surface of the drum with the friction material of the brake, but with the new material it has been found preferable to use a single section on each brake arm, the total length of the two aggregating not more than 20 per cent of the drum circumference. As a result, the heat of friction is more readily dissipated, the brake parts are more effectively cooled, and less heat is transmitted to the tire and tubes.



"Brakeblok" and brake arm fitted with it

Fastened by Bolts

Instead of by rivets, the blocks are fastened to the brake arms by bolts, and these do not come in contact with the drum. If the bolts should come loose, it would be impossible for the block to be detached from the arm, because the bolts are inserted in the arm radially, while the side walls of the slot containing the keeper are not radial but at an angle with the bolt, so as long as the bolt is in the slot the keeper cannot lose its position. If the bolts become loose the mechanism will rattle and thus arouse the attention of the operator.

The development of this block has covered a considerable period of time. Most of the earlier development work was done in the testing laboratory of The American Brake Shoe & Foundry Co., at Mahwah, N. J., but more recently a Mack 29-passenger bus, weighing approximately 16,000 lb., has been employed in brake tests on a mountain in Pennsylvania, between Chambersburg and McConnellsburg. This mountain provides severe operating conditions. The test course is 13,350 feet in length and the total drop is 1100 feet, making the average grade 8¼ per cent. The grade is nearly uniform, varying less than 1 per cent from the average either way.

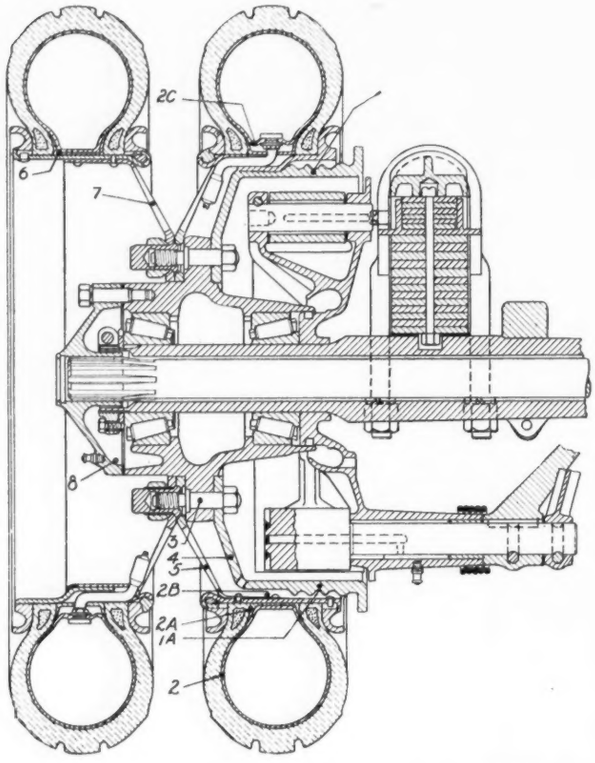
In addition to the brake tests, it seemed a propitious time for the determining the temperatures that result from friction and the extent to which these temperatures travel into the hub of the wheel or into the tires and inner tubes, so a large number of the thermocouples were attached to the various parts, their location being indicated in the cut herewith.

The bus is equipped with a Westinghouse air brake, with the diaphragm chambers securely attached to the rear axle. The regular brake arms have been replaced by arms to hold the new brake blocks, which are approximately 4 x 6 in. In the bus are instruments which record distance, time, pressure and temperature and there is also an instrument for determining the travel of the brake diaphragms.

A representative of *Automotive Industries* recently had an opportunity of observing the tests, which consisted of several emergency stops on a comparatively level roadway, followed by a run down the mountain with the gear lever in neutral position, and later a series of stops covering a two-hour period to imitate the stops which a bus would ordinarily make in regular city operation. The emergency stops were made in substantially the minimum possible distance and the action of the brakes was smooth and without any violent surge. During a run down the hill a speed of 15 miles per hour was maintained with the gear lever in neutral and with an initial application of 12 pounds air pressure in the diaphragms.

The floor of the bus is open, enabling one to look down upon the brake diaphragms and into the brake drums, the dust shields having been removed. At no

time during the long descent was there any annoyance from smoke or odors, and at the foot of the grade the bus seemed ready for any service stops it might be called upon to make. In fact, several hours after the completion of the run, two hours' of service stops were made and all stops were smooth and not "grabby."



Cross section of Mack bus axle end, wheel and brake, showing location of thermo-couples

While this is primarily a braking test, the temperature determined by the thermometers are most interesting, and the volume of data accumulated, showing the temperatures reached by the brake drums and other parts, should prove valuable to manufacturers and users of motor vehicles if published, as we understand they will be.

"Brakebloks," as they are called, are applicable both to internal service brakes and to external brakes of the transmission type. At present the blocks are being made at Lancaster, N. Y., but the company's headquarters will be at 30 Church Street, New York City.

New Method of Melting Iron

A NEW process for melting iron whereby it is freed of gaseous conclusions and consequent porosity, and is also deoxidized, is described in *Der Motorwagen* by Dr.-Eng. Gg. Bergmann. It was observed long ago that when iron is transported over considerable distances while in the molten state, it has a denser structure after solidification. On the basis of this observation the suggestion was made by Dr. Dechesne that the iron should be shaken or jolted while molten. Experiments made to this end showed that even the smallest gas bubbles—which are subject to the high specific pressure of the liquid iron—are detached by the jolting and escape.

It appears that certain other recently developed processes for freeing iron of gaseous inclusions or spongy spots call for greatly overheating the melt, to as high a temperature as 2700-2900 deg. Fahr., and they also require preheating of the molds. The overheating naturally involves a large increase in the fuel consumption and the preheating of the molds is said to be difficult and uncertain. In the new Dechesne process the treatment of the iron is entirely mechanical, and the physical effect is substantially the same as when a bottle of carbonated water is twirled and shaken.

In carrying out the process, what is known as an auxiliary hearth is provided in front of the cupola, which is constantly supplied with iron in the fluid state from the cupola. This auxiliary hearth is in the form of a substantially cubical box which is supported on trunnions at one side and on a camshaft at the other. The camshaft is rotated by means of a 5 hp. electric motor through worm gearing. The result is that the forward end of the auxiliary hearth is raised and lowered alternately. During a part of the lowering motion the pressure of the metal is removed from the gas bubbles, and this facilitates their escape.

Heating of the auxiliary hearth is effected by means of the gases from the cupola, which are derived from the coke of the charge. The temperature drop in the auxiliary hearth is said to be exceedingly small. Even if the mechanical agitation is continued for from one-half to one hour, the temperature of the iron drops only about 35 deg. Fahr., one of the reasons for this being that the chemical reactions which are promoted by the agitation are exothermic. It has been found that the gases given off consist of CO and SO_2, hence sulphur is being oxidized during the process.

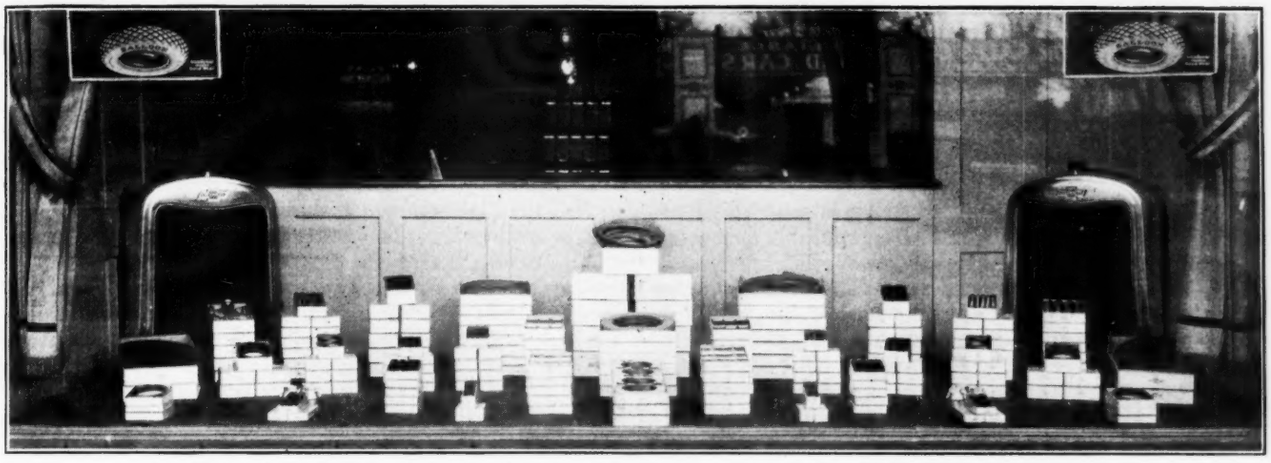
In the course of experiments substantial amounts of steel were added to the melt, and it was found that the resulting iron (semi-steel) did not "smear" or show any hard spots, in which respects it contrasted favorably with other semi-steels. Also the much-dreaded tendency of the iron to turn white was entirely absent. "Air-cooled" cylinders, which when produced by other methods always showed hard spots and a white grain structure in the flanges, were satisfactory in every way and remained gray to the very ends of the flanges.

The following table gives the chemical compositions and mechanical properties of "agitated" iron with different additions of steel. The transverse strengths were obtained from unfinished rods 1 3/16 in. in diameter and with 23.6 in. between supports.

PROPERTIES OF SEMI-STEELS

	ANALYSIS								Pour'g. Temp. Bri. Deg.	
Mark	C	Si	Mn	P	S	T.S.	Tr.S.	El.	H.	F.
R. 0	3.72	2.22	0.46	0.37	0.17	29100	59500	11.5	222	2410
R.10	3.20	2.27	0.56	0.38	0.08	36850	72200	12.5	216	2390
R.15	3.40	2.34	0.45	0.33	0.09	39000	74500	12.5	228	2370
R.20	3.38	2.15	0.42	0.37	0.13	42500	80000	12.5	217	2430
R.20	3.62	1.74	0.71	0.30	0.17	43300	77500	14.2	240	2370
R.30	3.48	2.15	0.45	0.20	0.13	45400	78800	14.0	215	2480
R.30	3.48	1.57	0.68	0.41	0.14	48000	81600	11.9	224	2445
R.50	3.02	1.83	0.40	0.34	0.14	47500	87300	12.5	215	2445
R.70	2.82	2.94	0.66	0.15	0.14	46100	92200	18.0	189	2460

MONTEVIDEO has announced its fourth annual automobile show for the middle of December. It will be held at the Pocotia Hotel. Nearly all cars at last year's show were American.



A window display of a Chevrolet dealer showing the neat results which can be obtained from exhibiting package parts

Chevrolet Plan Builds New Outlets for Replacement Parts

Independent dealers and service stations offered special discount of 25 per cent to handle genuine factory parts. Fast moving lines are now supplied in attractive packages.

By Lewis Dibble

A NEW plan which has been adopted by the Chevrolet Motor Co. for the distribution of replacement parts is drawing wide attention from independent dealers and service station operators all over the United States.

The plan calls for the offering of a special discount of 25 per cent on Chevrolet parts to selected independent garages and also for the attractive packaging of fast moving parts for which there is a large demand.

The plan is indicative of a trend on the part of automobile manufacturers to devote more time and attention to the merchandising of replacement parts and, in many respects, incorporates in principle the progressive methods for the merchandising of replacement parts outlined by A. R. Sandt of the General Motors Corp. sales division, during the Factory Service Managers' Forum, National Automobile Chamber of Commerce, in Detroit, June 15-16.

During the convention the principal topics revolved around the growing importance of service and the necessity for automobile manufacturers to broaden their outlets for their service parts. To accomplish this, it was quite generally contended that the manufacturer should encourage the independent dealer and service stations to use parts made by the original manufacturer. Since the meeting there has been a growing tendency on the part of manufacturers to carry out the various suggestions, and this move on the part of the Chevrolet is another indication that some of the larger automobile companies approve the fundamental policies outlined at the convention for the marketing of replacement parts.

G. S. D. 474

THIS CARD NOT TRANSFERABLE

No. 1X Date

Special Discount Card

Issued To

At

Who is entitled to a special discount of 25% from list price on all purchases of genuine Chevrolet parts. This card will be honored by all direct Chevrolet dealers when presented at time of purchase of parts.
This card may be recalled at any time.

Expires Dec. 31, 1927 (OVER)

This is the 25 per cent discount card which the Chevrolet Motor Co. issues after approving the independent garage or service station

Since the plan was first put into effect, in August, Chevrolet Motor Co. has done much to familiarize independent garage and service station operators with it. Letters calling attention to the plan, and a standard application blank for the discount privilege, were circularized to approximately 39,000 garages throughout the United States.

Thousands of replies have been received and each is being carefully checked up by the factory representatives working

in the company's 34 zones. To date, 2886 garages have been issued the discount cards, and according to J. P. Little, manager of the parts and service division of the general sales department, it will probably be January 1 before the plan is in full effect, due to the time and care required in making each individual survey.

Insist on Six-Day Week

Permits are granted only to garages which operate six days a week and which are of a reputable character.

On the application blank, a copy of which is reproduced in connection with this article, it will be noted that the applicant designates the size of his establishment, his tool equipment, number of mechanics employed and whether or not he operates on a flat rate or hourly basis. The applicant also promises to use only genuine Chevrolet parts in the repair of Chevrolet cars and promises not to sell the parts at a price to exceed the published list price.

Three factors have been kept in mind in working out this new policy:

First: Independent garages that service Chevrolet automobiles and obtain the approval of the Chevrolet Motor Co., will be issued a permit entitling them to a 25 per cent discount on genuine Chevrolet parts which may be purchased from any dealer or factory branch. This move, it is believed, will greatly stimulate the purchase of genuine Chevrolet parts by independent garages and service stations which heretofore have used parts obtained from outside sources because of more attractive discounts.

Second: Increasing the sale of parts to the independent garages will automatically open up new fields for the regular Chevrolet dealer, for it will put him in a position to make a reasonable profit on much of the parts business which through circumstances has heretofore been diverted to outside independent sources.

Third: The plan, by stimulating sales will increase the volume of business for the parts department of the Chevrolet Motor Co. and will mean that the original manufacturer of the car will be gaining a larger proportion of the replacement business.

The plan has no complicated workings. Independent garages may make application to the company and the latter, after conducting an investigation, can either approve or reject the application. When the application is approved, a blue card is issued entitling the holder to a straight 25 per cent discount on parts, purchased in quantities, from any dealer or factory branch in the United States.

Previous to the adoption of the new plan the company recommended that dealers grant to all independent garages and service stations a discount of 15 per cent. This left the matter entirely to the discretion of the dealer, with the result that it was not satisfactory for the very reason that it was followed by some dealers while others varied the discount which they allowed.

Under the new policy the company itself designates the garage entitled to the 25 per cent discount. If necessary, the garage can get the discount from the Chevrolet warehouse direct. In cases where permits are not issued, the company still recommends that its dealers allow the 15 per cent discount as heretofore.

A Profit for the Dealer

Besides providing a more attractive and uniform discount to the independent garage to whom permits are issued, the plan also makes it possible for the dealer to realize on the transaction, as the dealer gets a dis-

APPLICATION FOR SPECIAL DISCOUNT ALLOWED TO SELECTED INDEPENDENT GARAGES AND REPAIR SHOPS

Date.....

I hereby make application for the special Chevrolet discount allowed to Selected Independent Garages or Repair Shops.

NAME..... STREET.....

CITY OR TOWN..... STATE..... PHONE NO.....

My garage comprises the following:

Show Room Size..... Repair Shop Size.....

Stock Room Size..... Car storage, No. cars.....

I employ.....mechanics and repair an average of.....cars per day, charging $..... per hour.

I (do / do not) use Flat Rate system.

I have the following tool equipment:.....

.....

I am a (dealer / sub dealer) for the following cars:.....

I have an agreement similar to this with.....

In return for the privilege of receiving the special discount allowed to Selected Independent Garages or Repair Shops, I agree to observe the following conditions:

(1) To use only genuine Chevrolet parts, purchased from Chevrolet dealers or Chevrolet Motor Company, or its affiliated Companies in the repair of Chevrolet cars.

(2) It is understood the acceptance of this application does not give me any exclusive privileges of selling Chevrolet parts in the city or town in which I am located.

(3) I will not use the name of General Motors Corporation, Chevrolet Motor Company, or its affiliated Companies, or the name of a Chevrolet dealer as part of my firm name or to designate my place of business without full authority of the parties interested.

(4) I agree to sell all genuine Chevrolet parts purchased by me at not to exceed the published list prices for such parts. It is understood that all prices are subject to change without notice.

(5) The discount card with which I will be presented if this application is approved is to be used by me subject to the following conditions.

(a) It is not transferable and will be presented only by the person authorized by me for privilege of parts discount.

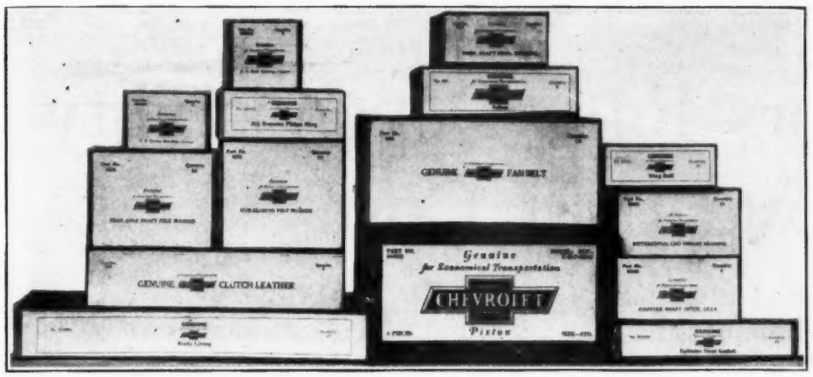
(b) It may be taken up by any authorized representative of the Chevrolet Motor Company or its affiliated Companies, or branches with whom I have this agreement and declared null and void at any time.

(c) It automatically expires on December 31, 1927, or on December 31 of any succeeding calendar year for which issued, but may be renewed at the discretion of an authorized representative of the Chevrolet Motor Company, or its affiliated Company in charge of that territory.

APPRCVED BY..... NAME OF GARAGE.....

DATE APPROVED..... SIGNATURE OF OWNER.....

Standard application blank for the discount privilege. 39,000 of these have been sent to garages throughout the country



At the present time a total of 114 Chevrolet replacement parts are being shipped in attractive packages such as those shown above. The practice holds many advantages for the dealer

count of approximately 40 per cent on parts from the company and allows a 25 per cent discount to the independent garage.

Chevrolet's policy of packaging fast moving parts in neat containers, bearing the company's emblem and the genuine trade label, and also stamping with the Chevrolet trade mark parts which are sold in competition with independent companies, so that a customer can satisfy himself that he is getting a genuine Chevrolet article, is proving highly successful.

During the first quarter of 1926, Chevrolet started packaging and marking several popular replacement parts, and the plan met with such instant favor from dealers all over the country that it has now been extended to include a list of 114 parts.

Putting parts up in attractive containers makes it easy for the dealer to arrange attractive window and showcase displays which invite the eye of the public. The plan has stimulated a new interest on the part of dealers to display replacement parts with a result that their efforts are reflected in increased parts sales.

Parts Which Are Packaged

Such parts as follow are now offered in attractive containers: Hub bearing felt, rear axle shaft felt washer, rear axle shaft key, propeller shaft housing bushing, differential side pinion, differential end thrust washer, bearing spacer, oil pump idler gear, oil pump drive gear, tie rod bolt, felt washer, water inlet pipe gasket, bevel ring screw, high and intermediate sliding gear, low and reverse sliding gear, countershaft drive gear, countershaft intermediate gear, countershaft low gear, differential and thrust bearing, clutch collar, valves, valve spring, water outlet gasket, exhaust fitting gasket, carburetor intake gasket, oil pan gasket, oil pan packing, main bearings both uppers and lowers, bearing shims, valve lifter, driven gear, fan belt, clutch leather, P. S. housing base gasket, king bolt, piston rings, water pump shaft, water pump gasket, water pump packing, oil pump cover, oil gauge, differential spider pinion, distributor and cover, switch key, oil pump gasket, oil pump drive gear, tie rod bolt, brake lining, felt washer, reflector, pistons, pistons and pins, wheel bearing felt, clutch friction ring, manifold gasket, cylinder head gasket, steering knuckle bushing, steering knuckle arm bushing, ignition switch and oil pump drive gear.

NEW ZEALAND is beginning a program of concrete road paving. The territory produces cement but has to import asphalt, and the preference for concrete has been voted by taxpayers.

Ignition Experiments

SOME experiments relating to the ignition by compression of combustible mixtures made up of air and vaporized liquid fuels were reported upon in a recent "note" to the French Academy of Science by Andre Pignot. Ignition by adiabatic compression is the method of most direct interest; it lends itself, moreover, to exceptionally precise measurement and it permits of the evaluation of the temperature of ignition with a degree of precision which depends upon that realized in the determination of the ratio γ of the two specific heats.

M. Pignot made use of an apparatus which was inspired by those utilized by Falk (*Annalen der Physik*, 1907, p. 480), and by Dixon (*Transactions of the Chemical Society*, 1914, First Part, p. 2036) in which the compression is effected instantaneously by the shock of a ram, up to a point determined in advance by a stop against which the piston abuts.

A mixture may be characterized by the volumetric compression necessary to effect its ignition when starting from a given initial temperature. For reasons of convenience and of rapidity of execution of the measurements, the volumetric compression ratio used in the tests was maintained constant and the initial temperature was varied until ignition occurred, the minimum initial temperature required being taken as a criterion of the ignitability of the particular mixture.

In studying a fuel, experiments were made with a considerable series of different mixtures of the fuel with pure and dry air. It may be characterized by the network of curves obtained with various compression ratios by plotting the mixture ratios as abscissas and the initial temperatures required for and sufficient to assure ignition, as ordinates.

So far tests have been made on normal hexane, heptane and octane, on cyclohexane, benzene, tolulene, metaxylene, mesixylene and ethyl alcohol, and tests are under way on methyl alcohol. The shape of the curves obtained with the aromatic hydrocarbons (benzene, toluene, xylene) differs materially from that of those obtained with the saturated hydrocarbons, (hexane, heptane, octane). The variations of the initial temperature required with mixture ratio are much more accentuated in the case of the aromatics, and the curve has a very pronounced minimum, which, however, does not correspond at all to the theoretical combining ratio.

With a volumetric compression ratio of 9, which was used for the most part, absolute ethyl alcohol gave a curve of ignition temperatures very similar to that obtained with benzene. With increasing proportions of water in the alcohol the initial temperatures required increased and the curves flattened out, the minimum vanishing entirely for a water content of 40 per cent.

Experiments have been started on complex fuels, such as cyclohexane-benzene mixtures, with which a continuous variation of the characteristic curves, without anomalies, was noted. Finally, some tests were made to determine the effect on the ignition temperature, if any, of so-called anti-detonants. To this end 10 per cent of tuloidine and 5 per cent of ethyl sulfide were added to hexane. These two substances, which are known as very active anti-detonants, have only an insignificant influence on the characteristic curves of a fuel.

Bus Operators Rate Dependability Above First Cost

Information gathered at A. E. R. A. meeting reveals growing desire for best equipment that can be found. Trolley men doubtful that buses ever can take place of street cars.

By K. W. Stillman

ALTHOUGH buses were more in evidence at the show and automotive transportation problems received more attention at the technical sessions of the American Electric Railway Association convention held in Cleveland last week than ever before, many of the electric railway men among the speakers voiced the belief that buses never can replace electric lines.

Frank R. Coates, president of the association, started the ball rolling in his speech opening the meetings, and he was followed by many others throughout the week, who, while telling of the ever increasing use of buses throughout the country, seemed, at the same time, to emphasize their belief that transportation on rubber can never be more than a younger—much younger—brother of the electric railway.

There appeared to be some tendency, as there has been at certain previous meetings, to emphasize the bus operations which are not profitable without touching so fully on the achievements of successful bus companies or on the fact that a large proportion of the unsuccessful operations are conducted along feeder routes which would be likely to furnish too little revenue for any form of public transportation.

One point was brought out several times during the week. Buses and electric cars usually are not direct competitors but both should be employed to the fullest extent to overcome private car competition. This way lies success for both electrics and buses—not in fighting each other.

Signs of Prosperity

Mr. Coates, in his opening speech, recalled the dire prophecies made a few years ago concerning the future of electric railway companies and pointed with pride to the present exhibit—the largest and best attended of all—as proving the fallacy of the portents. An interesting consideration here is that about half the total exhibit space and a rather large portion of the technical sessions were devoted to automotive transportation.

In addition to the formal papers presented at the convention there were a number of points of interest brought out in informal talks with operators and manufacturers at the show and at hotels.

Experience of the past year or two seems to have convinced many operators that first cost of a bus is of smaller importance than its ability to run continuously. They seem desirous of having the very best parts and equipment available because each bus must be kept in operating condition at all times to avoid the necessity for surplus vehicles to carry on with while extensive repairs are being made. Experience data relative to maintenance costs is becoming a very important factor in making sales and, according to some operators, it already outweighs all other considerations.

Want Faster Acceleration

Greater acceleration is another item which is being demanded. For city service, especially, buses must be able to get away as quickly as passenger cars in order to hold their place in traffic and keep to their schedules. Whether this means the use of still more powerful engines or making available at the rear wheels more of the present developed power, the operators say that better acceleration must be found somewhere.

This point brings the gas-electric drive into prominence. Because of the absence of gear shifting it is commonly believed that this type of vehicle has a better acceleration rate than one equipped with mechanical drive. No direct comparisons between the two types are available, however, so the accuracy of this opinion is still in question. It is certain, however, that some manufacturers are working hard to develop the gas-electric, particularly to reduce its weight, in hopes that it will offer a solution to a number of the problems which city bus operators are confronted with.

More interest is being given to multi-wheeled vehicles, not only in an effort to get better riding qualities but also because of present and possible future legislation limiting permissible axle weights.

There appears to be considerable argument among operators as to which size of bus is best.

The independent operator of buses seems certain to have severe competition in the future. The electric railroads, and in many localities the steam lines, are going after the bus business hard and it is generally true that their size and position in a community makes their operations of great importance. Another factor in the situation is suggested by the rumors which floated around to the effect that some bus builders have refused to sell to independents when the new installation threatened to become a competitor of an electric or steam line.

The president of the A. E. R. A. Engineering Association, C. R. Harte, said in his opening address that noisy operation of electric cars is a very strong barrier to their success in competition with motor vehicles

and he urged continued study of noise prevention methods upon his association.

The Tuesday morning session of the American Association was devoted to the subject of traffic congestion and Col. C. O. Sherrill, city manager of Cincinnati, offered a new thought by calling attention to the tremendous price the public is paying for misuse of transportation facilities. A parked car, he said, takes up space in public streets worth perhaps $2000.

Merchants are slowly learning, according to Colonel Sherrill, that parking space outside their shops keeps away nine possible customers for every one who parks there. The parking situation is driving shoppers to outlying districts where the downtown merchants must follow if no solution of the problem is found soon.

Other speakers touched on street widening, establishment of thoroughfares without crossings, better traffic control methods, restriction of pedestrians, and changed times for making deliveries, all of which were suggested as offering possibilities for relieving congestion.

Traffic Congestion Report

The report of the Committee on Traffic Congestion of the Transportation and Traffic Association suggested further study of the recommendations made by the Hoover Conference on traffic problems, particularly with regard to securing adoption of a uniform motor vehicle operators' license act and traffic laws. The committee also was interested in recent traffic control developments designed to give, as nearly as possible, continuous movement of vehicles and suggested further study of this by the association.

A sure sign of the increasing use being made of buses by electric railway companies was shown by the report of the Committee on Bus Operation of the Transportation and Traffic Association. In previous years this committee has presented statistics and data to help companies determine whether or not they should enter the bus field. This year the committee report concerned itself with practical operating problems and covered such points as fares, taxes, franchises, tire mileage contracts, liability insurance, double deck operation and similar subjects of interest only to those actually engaged in bus operation.

Interurban fares should be higher than city fares, according to the report, because the sparsity of population is reflected in low load factors. Long bus lines will not pay unless both terminals are cities of at least 25,000 population. Bus service should not be established unless it can pay its own way.

There may develop considerable competition in bus operation between steam and electric lines. This should be forestalled if possible, was the committee's opinion, by co-ordination of facilities, possibly by agreements to let electric railways furnish motor transportation.

Two features are essential in all bus franchises—service at reasonable rates and a fair return to the operating company.

Better Public Relations

Chartered bus operation was recommended as a means of developing new business and securing more efficient use of equipment during off peak hours. Better public relations are a valuable by-product of bus operation when used in establishing desired service in territories unable to support rail lines.

No bus line should be operated long at a loss. Either fares should be raised to bring in added revenue or the service discontinued once it has been ascertained that future development of traffic to revenue producing proportions is unlikely.

Properly drawn tire mileage contracts were recommended as advantageous for operator and manufacturer. The questions of liability insurance and operation of double deckers received the committee's attention, but no definite recommendations were made because of the lack of experience data and the great effect of local conditions.

In a paper read before the Claims Association Monday afternoon, H. V. Drown, Public Service Railway Co., gave the experience of his company as showing bus accidents per mile slightly less than trolley car accidents but, because of their smaller carrying capacity, considerable greater per passenger carried.

For the year ended April 1, 1926, the operation of some 800 buses over about 100 lines resulted in 442.46 accidents per million bus miles as compared with a similar figure of 444.99 for trolley cars. Accidents per million passengers, however, totaled 82.86 for buses against 51.91 for the railway.

Better traffic regulation and relief of congestion are the most important steps to take toward accident prevention, Mr. Drown said, but he also counseled more consideration for standardization of equipment so that operators will be familiar with the vehicles; uniform width and length; steering apparatus and brakes.

A special committee of the Engineering Association presented a report covering the design of buildings for maintenance, storage and operation of buses which should be of particular interest to operators.

The salient features brought out were in regard to washing facilities; pit facilities; lighting, heating and ventilating systems and fire insurance and protection requirements.

The committee recommended decentralization of washing facilities, believing it should be possible to wash and clean a bus at whatever point in the garage it may be stored.

Pits for overhaul and repair work should always be used. In States where laws prohibit them, racks or hoists should be employed for the same purpose. Adequate light—natural if possible—proper heat conditions and a ventilating system to carry off gas and carbon monoxide vapors are requisites to obtaining efficient workmanship as well as to reduce fire hazard.

Bus Traffic Leads in London

PUBLICATION of London passenger traffic figures for 1925 shows that bus passengers have increased by 127 per cent since 1913. In the twelve years railroad traffic has increased only 45 per cent, and street railway traffic 21 per cent. In the period under review the total traffic increased by 63 per cent.

In 1913 the figures were as follows:

	Passengers Carried	Per Cent of Total
Street Railways	812,000,000	36
Motor Buses	736,000,000	32
Railroads	725,000,000	32

The 1925 figures are:

	Passengers Carried	Per Cent of Total
Motor Buses	1,671,000,000	45
Railroads	1,049,000,000	28
Street Railways	979,000,000	27

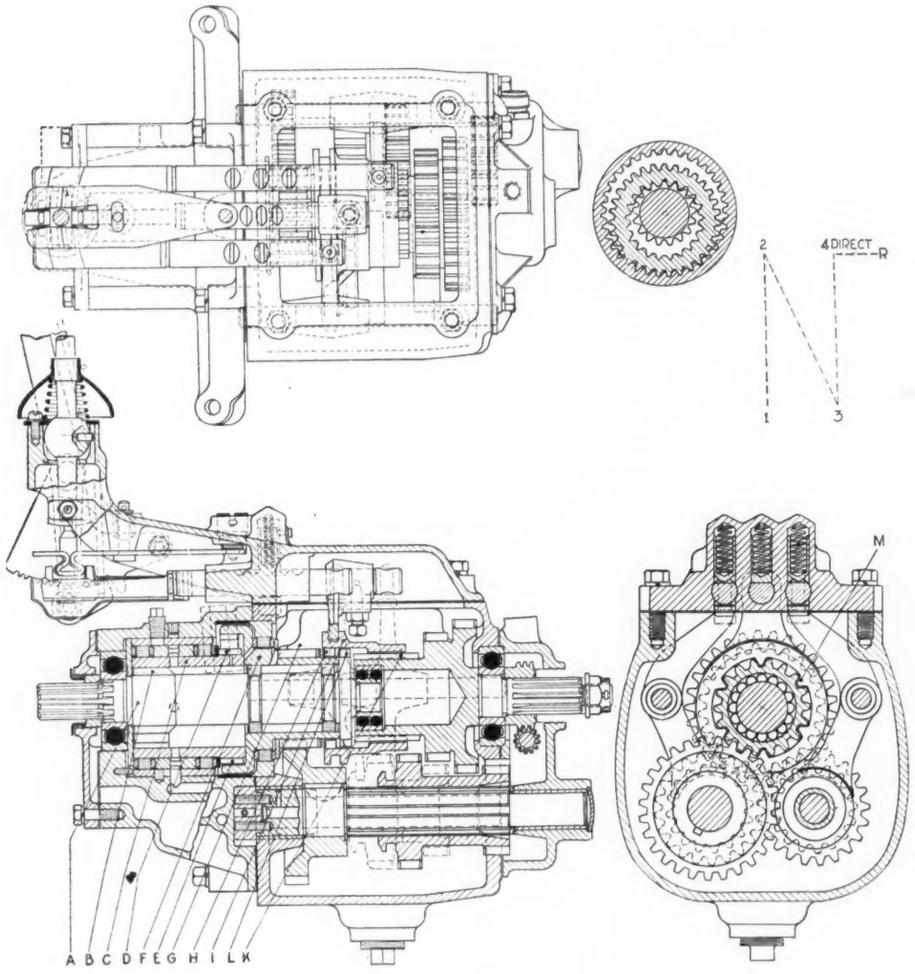
Novel Four-Speed Transmission Used on New Star "Fleetruck"

Fourth speed, used for ordinary driving, is the high of the transmission and gives direct drive to helical bevel rear axle. Third speed, for traffic and hills, is undergeared.

By Donald Blanchard

A NOVEL four-speed transmission is used on a new Star commercial vehicle model, the six-cylinder Fleetruck, which gives substantially the same effect as two high speeds. The shift from one of the "high" speeds to the other is made easily and positively, and from the standpoints of silence and efficiency of transmission there is little to choose between the two.

The fourth speed is actually the high of the transmission and gives a direct drive to the helical bevel rear axle, which has a reduction of 5.10 to 1. Third speed is undergeared 1.39 to 1, giving an overall reduction to the rear wheels of 7.10 to 1. The shift from or to this speed is made by a sliding clutch which is positive in its action. First, second and reverse speeds are obtained in the conventional manner, except that the shifts are made by moving gear clusters on the countershaft and reverse idler shaft instead of by shifting gears on the mainshaft as is the usual arrangement.



Top view and longitudinal and transverse sections of "Twin-High" four speed transmission used in the Star Six Fleetruck. In the upper right corner, the internal gearing is shown in section and also a plan of the movement of the shifter lever. Reverse is protected by a latch operated by a downward pressure on the shifter lever

Quiet operation in the undergeared third speed results from the use of two internal gears. With this type of gearing, there are a greater number of teeth in contact and they come into complete mesh more gradually than with spur gearing, both of which factors tend to reduce noise. Moreover, lubrication is better, as centrifugal action tends to retain the oil between the teeth of the internal gear instead of throwing it out, as in the spur gear. In a test drive, the writer found that, except for the difference in engine speed, it was impossible to tell whether third or fourth speed was engaged, which testifies to the quietness of the undergearing. The shift can be made easily without declutching, but, naturally, a smoother shift is obtained if the clutch is disengaged.

Ordinary driving is done in fourth speed, while for driving in traffic, where high acceleration is demanded, or for hill climbing, the undergeared third speed is available. Inasmuch as the shift down may be made without difficulty and as the transmission operates quietly in this speed, there is no rea-

son why the driver should not take full advantage of this feature.

In fourth speed, engine speeds are reduced materially in comparison with what they would be if a three speed transmission were used and, as a consequence, fuel economy is increased and wear and tear on the powerplant and vibration are reduced. At the same time, increased torque is readily available for rapid acceleration and hill climbing by means of the easy and positive shift to the undergeared third speed. Losses in this undergeared third speed are about two per cent of the power transmitted, so there is no excessive amount of heat to be dissipated. Such heat as does develop is easily taken care of by the oil which is circulated positively by means of a sliding vane type pump driven from the forward end of the countershaft.

Driven Through Flexible Coupling

Referring to the accompanying drawings, the transmission is mounted amidships and is driven through a flexible coupling. The driven shaft of the transmission is mounted in an annular ball bearing at its forward end and at its rear end on two roller bearings inside of a cup gear which in turn is carried by a large roller bearing in the main case. A stub extension at the extreme rear end of the driven shaft has mounted on it a double-row ball bearing which supports the forward end of the second and low gear cluster. This driven shaft has a 17 tooth pinion *A* which meshes at *B* with a 21 tooth internal gear on the sleeve *C*. This sleeve is supported in the case by two roller bearings and has an external gear *D* of 31 teeth at its outer end which meshes at *E* with an internal gear of 35 teeth. It will be noted that in each case there is a difference of only four teeth between the driving pinions and the internal gears, which makes the gears come into full mesh very gradually and gives quiet operation—e. g., velocity of approach and recession of teeth in mating gears is low as compared with spur gearing.

The 35 tooth internal gear is part of a second sleeve *F* which is piloted in the case by the large roller bearing previously mentioned and maintained square with the driven shaft of the transmission by two roller bearings. On the outer end of this sleeve, there is an external gear *G* which drives the countershaft and also serves as the male member of a gear type clutch. Only every third tooth of this gear is of full face width, the intervening two being backed off 7/64 in. The female clutch member consists of an internal gear *H* on the forward end of a third sleeve *J* which is slidably mounted on the transmission main shaft by means of an internal-external gear arrangement as shown at *K*. Near the rear end of the driven shaft, just forward of its pilot bearing, there is an external gear *L*. It will be noticed that in the neutral position shown, the teeth of the internal clutch gear lie between the gears *G* and *L*.

Teeth Broached Out

The internal clutch gear has only every third tooth, the intervening two teeth being broached out as shown in the transverse section of the transmission at *M*. This construction, together with the backing off of the teeth on the gear *G*, assures positive action of the clutch regardless of relative speeds, as there is a possible movement of about 40 deg. before engagement.

For third speed, the slidably mounted sleeve *J* is shifted forward so that gears *G* and *H* are in mesh. The drive is from the pinion *A* through the internal gear at *B* to the sleeve *C;* thence through the internal gearing at *D* to the sleeve *F*. From this sleeve, torque is transmitted by the clutch to the mainshaft. In fourth speed, the sleeve *J* is shifted back, bringing gears *H* and *L* into mesh and positively coupling the driven and main shafts of the transmission for direct drive.

A sliding vane oil pump is shown at the forward end of the transmission. It delivers lubricant to the inside of the sleeve *C*, thus insuring proper oiling of the internal gearing and giving quiet and efficient operation.

The various positions of the shifting lever are shown in the accompanying sketch. It will be noted that reverse position is the same as for fourth speed, except that the lever must be moved farther to the right in the neutral slot before pushing forward to engage the gears. Accidental engagement of reverse is guarded against by a latch operated by a downward pressure on the shifter lever.

The transmission also simplifies the problems of rear axle design, as smaller reduction ratios are possible, thus permitting the use of a larger pinion without increasing the overall diameter of the ring gear and axle housing.

Heavy Gas Tax Revenue

TAXES on gasoline used in motor vehicles amounted to $84,939,373 in the first six months of 1926, according to the Bureau of Public Roads of the United States Department of Agriculture. This amount was made available as follows: $54,981,677 to State highway departments, $19,338,976 for county and local roads, $6,329,413 for State and county road bonds, and $4,140,998 for miscellaneous purposes.

A total of 3,560,987,586 gallons of gasoline were taxed and it is estimated that an additional 856,450,000 gallons were consumed in the four States in which taxes are not collected. All of the States except Illinois, Massachusetts, New Jersey and New York imposed a gasoline tax, the rate ranging from one to five cents with an average of 2.39 cents per gallon. Since 19,697,832 motor vehicles were registered in the six months' period, the gasoline consumption per vehicle averaged 225 gallons.

Gasoline taxes were first imposed in 1919 when four States adopted the tax and derived a revenue of a little more than one million dollars. The practice is now general and the large revenue derived is one of the most important sources of highway income.

The revenue derived from the gasoline tax in the first six months of 1926 by States was as follows:

Alabama	$1,175,152	Nevada	173,719
Arizona	456,334	New Hampshire	263,944
Arkansas	1,861,280	New Jersey	.....
California	7,413,624	New Mexico	332,536
Colorado	921,426	New York	.....
Connecticut	1,140,433	North Carolina	3,598,412
Delaware	173,214	North Dakota	339,507
Florida	6,197,421	Ohio	5,968,232
Georgia	2,559,217	Oklahoma	2,775,015
Idaho	477,123	Oregon	1,466,204
Illinois	.....	Pennsylvania	5,252,410
Indiana	4,022,264	Rhode Island	224,693
Iowa	2,193,634	South Carolina	2,454,033
Kansas	1,839,712	South Dakota	848,663
Kentucky	2,448,809	Tennessee	1,700,601
Louisiana	1,253,859	Texas	2,355,792
Maine	561,791	Utah	568,724
Maryland	1,019,388	Vermont	179,468
Massachusetts	.....	Virginia	2,446,643
Michigan	4,373,598	Washington	1,595,302
Minnesota	2,148,340	West Virginia	1,194,022
Mississippi	1,722,707	Wisconsin	2,189,579
Missouri	2,561,611	Wyoming	220,833
Montana	388,946	District of Columbia	478,217
Nebraska	1,402,941		
		Total	$84,939,373

Depression *of* Car Sales *in* South Likely *to be* Short-Lived

Local automobile men not alarmed over business situation caused by slump in cotton. Many confidentially expect that 1927 will be better year than 1926.

By A. V. Comings

REPORTS of a tremendous cotton crop in the Southern states and a consequent lowering in price below actual cost of production has caused motor car manufacturers to look with a great deal of concern on the possibility of curtailed sales in that section during the remainder of this year and in 1927. To a certain extent this concern is justified, but it is untirely possible that when the present hue and cry is over, and the cotton situation has adjusted itself, the automotive market will be found quite as good as during the past year, and it is not unlikely that it will prove better.

On a recent trip that included the cities of Memphis, Birmingham, Atlanta, and other Southern towns, the writer found the better type of automobile distributors far from pessimistic as to the future of their business in that section of the cotton-growing South. To be sure, the present flurry over cotton prices has already brought a perceptible slow-up in sales, but there seemed to be no feeling on the part of distributors that this would be permanent and they were backing up their optimism with increased commitments for cars over the next twelve-month period. This was particularly true of distributors handling the leading makes of cars. Survey of the situation indicates that, even if there are fewer cars sold through this section during 1927 than in 1926, these leading distributors will, through their better and more efficient selling organizations, get a larger percentage of the total business and therefore dispose of their larger commitments even in the face of somewhat adverse conditions.

Crop Estimate Causes Drop

Cotton prices broke sharply when the U. S. Agricultural Department published its last estimate of what the total crop would be and at this writing cotton is selling at two to three cents below what is considered actual cost of production.

A protest has gone up in many parts of the South at Secretary Jardine's estimate of this year's cotton crop, Southern cotton growers claiming that the figures exceed the actual crop by a wide margin. But buyers based prices on the government estimate, nevertheless, and as a result those small planters who are always forced to sell early to take care of borrowed money find themselves badly pinched.

It is not at all unlikely that those planters who are able to hold on and who raised about 50 per cent of this year's crop will realize a fair profit, for a few weeks may show that the planters, and not the government, are right as to the actual production, and the crop may not prove to be as huge as government figures tend to show. In this event, prices will naturally rise, and when the remainder of the crop is sold there will be a return to the growers that will place them in position to buy motor cars in considerable quantity.

This is an element that lends considerable hope to the situation, and Southern motor car distributors are banking on the situation to clear up in the next few months to a point where they may plan very definitely for a big business in 1927.

Government Will Extend Aid

The Federal Government has indicated that it stands ready to step into the breach to alleviate the situation by extending financial aid to the planters if necessary. Southern banking interests have also laid plans to pool their resources for credit purposes and to protect the weak growers in such a manner that they will not be forced to dump their crops on the market regardless of price conditions.

President Coolidge has taken cognizance of the situation by conferring with Secretary Mellon, who stated that there would be no difficulty in obtaining bank credits for the planters through the Federal Farm Loan Bank. Chairman Albert C. Williams of the Federal Farm Loan Board has said that there are funds available to extend more credits beyond the $30,000,000 already authorized, provided such a course is found necessary.

Secretary Jardine of the Agricultural Department does not think the picture is as black as it has been painted. In a recent letter to the president of the Alabama Farm Bureau Federation he says:

"I am convinced that this situation is very largely due to panic conditions which, it is to be hoped, are only temporary. The basic economic conditions of the country are sound, and cotton producers must soon realize that the intrinsic value of this crop has not changed in these past few weeks. The people of the world need all the cotton that we can produce. We are in a position to supply their needs in an orderly manner. Cotton is not a perishable commodity. We have the necessary facilities for storing the crop for months or if need be for years and ample credit to carry it. Cotton in storage is probably the soundest basis for credit that we know.

"I am glad to note the evidences that these facts are

rapidly gaining general recognition throughout the South. It is my earnest hope that the present stampede may be checked while the major part of the crop remains in the hands of the farmers. The bankers and many other business agencies of the South are loyally cooperating to restore confidence, and I assure you that the Department of Agriculture is actively supporting this movement.

"Other agencies of the Federal Government are also available. Credit facilities through the ordinary banking channels appear to be adequate, but we have in addition if needed the services and resources of the intermediate credit banks. It was for just such emergencies as the present one that these banks were established. Those in charge of them have assured me that they are ready to do everything in their power. At present they are loaning money freely to the cotton cooperatives, and they are prepared also to extend credit to other cotton farmers.

"I do not share the view, expressed by some, that a large crop of cotton or a large carry-over from one season to the next is a misfortune."

Other Factors Besides Cotton

There is no gainsaying the big place that success or failure of cotton has on Southern pocketbooks; nevertheless, the sales executive who does not take into consideration many other highly important factors in planning the future will shoot wide of the mark.

North Carolina, for instance, has learned the lesson of diversified farming, and no matter what cotton may do, this state has a bumper tobacco crop this year which will be disposed of at top prices, adding dozens of millions of dollars to the purchasing power of its citizens. Other of its agricultural products are also bringing good prices, and have done so for several years, with the result that North Carolina evidences its prosperity throughout the length and breadth of that fair state.

Few cities in the union show the aggressive and healthy expansion that Atlanta has exhibited during the past few years, and there seems no prospect of a letdown in this forward moving stride. As the great distributing point of its part of the South, Atlanta has attracted thousands of well paid and prosperous new comers of late, and the building program which is still under way bids fair to make Atlanta forge even farther to the front among American cities. Millions of dollars are being poured into the development of the city and its environs annually, and this expansion is based on a growing empire whose future motor car buying power need cause no worry on the part of manufacturers.

Georgia has gone ahead somewhat in the program of diversification, which is the hope of Southern farmers, and there is little doubt but that the next few years will see great strides in this direction. It is true that the impetus given this movement several years ago seems somewhat spent just now, but those who have the agricultural future of the South at heart are persisting in their efforts, and there will come greater activity that can not fail of results as time goes on.

There is no pessimism in Birmingham. The largest individual steel mill in the world is located in the Birmingham area, and in Birmingham and Bessemer, just a few miles distant, the United States Steel Corporation has a $100,000,000 budget for the next ten years which bids fair to place this city on the map as one of the greatest steel manufacturing centers in the world. Right now, viewing the valley in which Birmingham nestles from one of the beautiful residence sections recently opened up, there appears a haze of smoke that leaves no question in the mind as to whether the steel mills are active. They are, every one of them.

Favored by Nature

Nowhere else in this country are iron ore, coal and limestone—the three necessities for making steel—found in the same locality. And much of these three goes to the mills by gravity, the combination making it possible to use the low grade iron ore and produce steel at a figure which meets competition everywhere.

A great industrial community means a huge farming empire to furnish its necessities, and this is developing and will develop in Alabama as the years go by. Cotton will be relegated to a subordinate place as Alabama farmers realize their market for diversified crops. But at the present time conditions in the city of Birmingham cannot be considered as typical of all Alabama.

In approximating next year's automotive business in the South there is much speculation as to what Florida may be expected to do. The recent hurricane has upset all ordinary calculations, but it would not be surprising if distributors and dealers down there who are hardest hit will be most active among the aggressive business-getters next year. As one of this group recently said to his distributor:

"It has been a good thing for a lot of us. For myself, well, I've been making pretty good money the past few years and I was getting kind of lazy, I guess. But now I've got a real job cut out for me, I'm working harder than I have for years, and I'm happier, too, than I've been for years."

That is the kind of spirit that animates Florida's automotive men, and they're out for new business records in 1927.

Working All the Harder

Insurance men estimate that the automotive trade was hit to the tune of $50,000,000 in the hurricane, but the men who sell cars and other automotive merchandise are digging into their job with all their energy, and a quick comeback may be expected.

Insurance companies have taken a very broad stand as to settlements and much insurance money has been poured into the state which will help immeasurably in the rehabilitation of the industry.

One factor enters into the Southern situation that time alone is going to help. Unlike most Northern states, where several very good business men may be found available to take over car dealer franchises, Southern towns in the rural sections provide but few dealers of the aggressive, executive type who may be counted on to do a really first class job. The result is that Southern distributors find that a very large majority of their sales are contributed by a small percentage of their dealers, and these dealers are usually located in the medium and larger communities. In fact, in many of the smaller communities it simply has been impossible thus far to make a dealership work out profitably.

The result is that the leading makes of cars, usually handled by the best, most aggressive distributors, have signed a large proportion of the most desirable dealers and those dealers who are left for the smaller production factories are not as high class sales producers as might be desired in some cases.

Many of the better type of distributors are doing an excellent job in bringing about more efficient selling and management on the part of their dealer organizations, and this will be reflected by greater sales for these particular organizations in 1927 and future years.

Just Among Ourselves

Sales Figures Show Some Companies Lagging

SALES figures for typical territories continue to bear out our analysis of several weeks back indicating the uneven distribution of the great prosperity with which the automotive industry has been visited during 1926 and the presence of relatively large production companies among those who thus far have not been coming up to 1925 records. Detailed sales statistics for the state of Pennsylvania, for instance, show that, during the first half of this year, 55 per cent of the passenger car companies selling in the state did better than last year; the remaining 45 per cent either sold less than in 1925 or consisted of makes which no longer are being manufactured and whose sales represent merely cleaning up of old stocks. In this later group were about six of the 60 companies comprising the entire list. The truck picture is about the same. Here 57 per cent of the companies did better in the first six months of this year than in the same period of 1925, while 36 per cent failed to come up to 1925 totals. The rest just equalled last year's performance. These percentages are based on figures issued by the Pennsylvania Motor List Corp.

* * *

Interesting Statistics on Open Car Sales

ANALYSIS of the open and closed car sales figures for Pennsylvania tend to emphasize the continuing importance of the open car as a factor in retail selling. In the first six months of this year about 22 per cent of all the cars sold in the Keystone State were open. In the winter months of January and February, when open car buying might be expected to be at a low ebb, 24.6 per cent of Pennsylvania car buyers chose open models. The low point of open car buying was reached in March when these models constituted 19.3 per cent of the total sales for the months. So long as nearly one-quarter of all the new vehicles sold in an important northern state like Pennsylvania continue to be open models, this type of car is worthy of some reasonable amount of merchandising attention from every factory, even though the constant increase in percentage of closed car sales be clearly recognized as likely to continue.

* * *

Increasing Comfort of Railway Travel

HEARD the other day that one of the big railroads is experimenting with the application of roller bearings to some of its passenger carrying cars. If the report is true the automotive industry can more or less take credit for having pioneered the way in another important engineering development which finds application in other fields. If the railroads should come to the use of anti-friction bearings, the wear and tear on the nerves of thousands of passengers certainly would be reduced materially. The constant increase in quietness of automobile operation and the almost complete lack of progress along this line in railway cars probably has been an important factor in increasing the use of automobiles and decreasing the day coach travel on the railroads. That the public likes and will pay for more comfortable transportation is indicated by the fact that, according to *Railway Age*, travel in day coaches declined 22 per cent between 1921 and 1925, while travel in sleeping and parlor cars increased 22 per cent during the same period despite the surcharge on the latter form of travel. Riding comfort bids fair to become a more important element in both automobile and rail transportation as time goes on.

39 Car Companies Draw Show Space

DRAWINGS for the twenty-seventh New York Show were made last week. Thirty-nine passenger car companies answered the roll call as against 45 last year. Two names—Ajax and Cleveland—are absent this year simply because of having been incorporated under the Nash and Chandler banners. That means that four names will really be missing this year as compared with last on the passenger car floors. But the show itself is going to be bigger than ever. Four makers—Cadillac, Oakland Studebaker and Overland—drew two spaces this year. Taxicab exhibits will be present again—staged this time by Yellow, Oakland and Dodge; trucks will be exhibited for the first time; and a special shop equipment section will be an added feature.

* * *

18 Truck Builders to Have Exhibits

THE truck displays are going to be chiefly, it seems, of vehicles of the light delivery type. Since the truck exhibits are to be shown on the third floor of the Grand Central Palace, the carrying capacity of the elevator becomes a dominating factor in determining what can and what cannot be shown. Eighteen commercial vehicle makers will exhibit. A special shop equipment section will be a new feature of the Chicago show as well as of the New York exhibit. The truck exhibit is confined to New York. And incidentally, there is going to be some really new stuff at the National Shows this year, unless our guessing is even worse than usual. Some of it will be announced before the shows, probably, but a good many people, both inside and outside the trade, will get their first good look at it in New York in January.—N. G. S.

Sunbeam and *Wolseley* on British Market With *New Sixes*

Former makes substantial price cuts with introduction of new "20" chassis. Wolseley is two-liter job with seven-bearing crankshaft selling at £450.

By M. W. Bourdon

NEW six-cylinder models have just been brought out by two important British producers, Sunbeam and Wolseley.

The 1926 model 20 hp. six-cylinder Sunbeam has been superseded by a new chassis of the same catalogue rating but different engine dimensions, viz., 75 x 110 m.m. (2920 c.c. or 178 cu. in.). It is the second of the new models for next year, the first being the 25 hp. Six announced in July. A third new type will be announced shortly.

The new "20" has a block cylinder casting with separate head and separate aluminum two-part crankcase with four-point suspension. An aluminum cover with an integral breather cap and oil filler surmounts the cylinder head.

A four-bearing crankshaft is used, machined from the solid billet with integral counterweights and a disk or circular web near the front end that serves as the fixed unit of a frictional type torsion damper. A phosphor bronze plate is interposed between the circular web and the inner surface of the floating unit or "flywheel" of the damper. Lubrication throughout is by pressure.

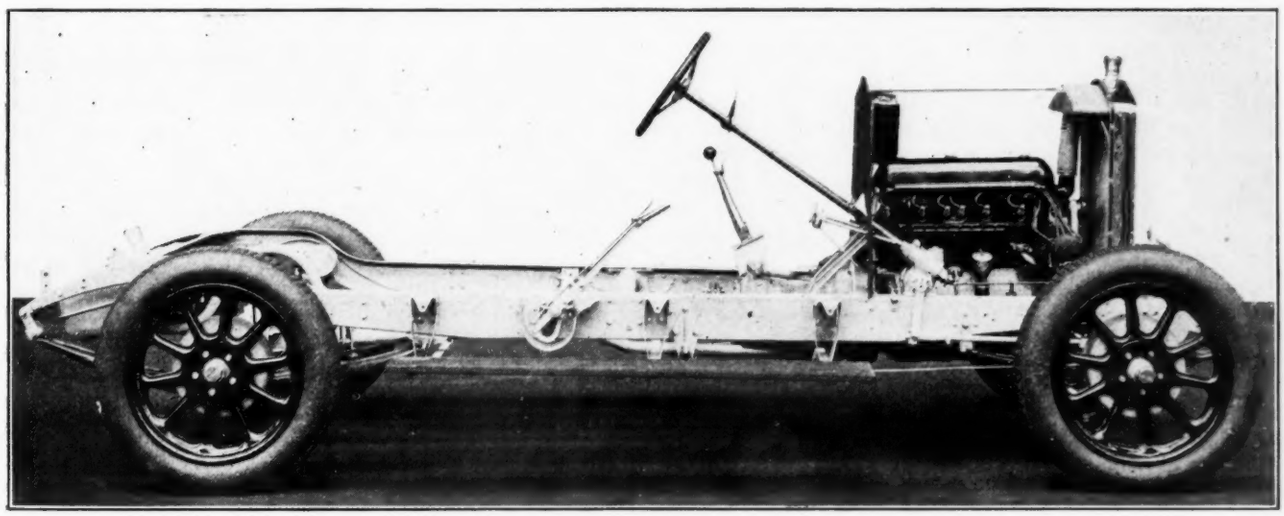
The oil passages leading to the overhead valve rockers from a pipe that runs up to the front end of the cylinder head are formed entirely within the head castings and the rocker shaft brackets. Each rocker is drilled for oil to pass to the spherical joints of the pushrods and further holes lead from the opposite sides of alternate rockers to allow oil to exude on to the valve guides.

The large diameter hollow tappets have a flat face in contact with the cams, while the pushrods are said to be of an alloy that expands in accord with the cylinder block. Exhaust and inlet manifolds are separate, the former having its down-take at the front and being longitudinally ribbed, while the latter is water jacketed. The main portion of the inlet manifold is of round section but the six outlets are rectangular. Silent chains are used for the drives of camshaft and auxiliaries.

An unusual feature of the single-plate clutch is that the driven aluminum disk is split into three segmental arms which are faced with fabric and are twisted slightly (like propeller blades), resulting in their trailing edges coming into contact first with the driving members. The latter have oil traps formed in them whence oil is thrown centrifugally to the outside of the clutch as a whole.

Engine, clutch casing and four-speed gearset (the latter with side control lever) are formed as a unit. The back axle ratio is 4.727 for open cars and for closed models slightly lower.

And enclosed propeller shaft, spiral bevel final drive, and a banjo type rear axle form the other elements of



Chassis of new Wolseley Light Six

the transmission. Cantilever rear springs and half-elliptic fronts serve for suspension.

The four-wheel brakes are pedal-operated, and a hand lever actuates a second pair of shoes within each rear wheel drum. Worm and nut steering gear is used. The wire wheels have 31 x 5¼ in. Dunlop tires as standard. The wheelbase and track are 124½ in. and 55 in. respectively and the chassis weight 2380 lb. The prices of the complete cars are distinctly low in comparison with other and earlier Sunbeam models, that of the phaeton with all-weather top and side screening being £750, which is £200 less than the 1926 model "20". A Weymann sedan is offered at £850 and a coachbuilt model at £895.

Wolseley Two-Liter Six

The Wolseley Motor Co. has produced a new 2-liter light Six to sell with all-weather open body at £450 and as a sedan at £495. Numerous distinctive features characterize the chassis design. Cylinder dimensions are 2 9/16 in. x 4 in., and the engine is said to develop well over 45 b.hp. with a speed range up to over 4000 r.p.m.

The crankshaft has seven bearings, the diamter of six of which is over 70 per cent of the cylinder diameter, while the flywheel bearing is 2½ in. in diameter and the journal is case-hardened. The cylinder block and top half of the crankcase are formed as a single unit. Front and rear end bearings are not split but formed in detachable end castings. The forward one of the latter carries as a unit the whole of the spiral bevel gear assembly for the vertical drive shaft of the overhead camshaft, as well as the skew gear drive for the accessories cross-shaft. Drive for the gear type oil pump is also supported by the detachable unit referred to. Steel pressings are used for the underpan and a valve cover.

The engine has a flexible three point support, the rear arms resting on conical rubber buffers and the front trunnion being provided with a rubber bushing and washers. Connecting rods are of duralumin and the three-ringed pistons of aluminum. Floating piston pins are used, with bronze bushes in the piston bosses as well as in the connecting rod. The drive for the overhead camshaft is on the same lines as that of the existing overhead camshaft Wolseley four-cylinder models.

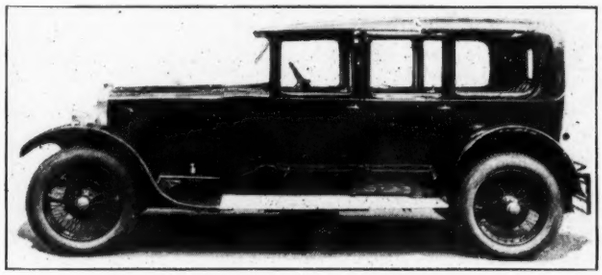
Forced lubrication is used throughout. The oil filter is located accessibly in a projecting casing at the side and the drain plug can be removed by means of the jack handle.

Thermo syphon circulation, a two-bladed aluminum fan driven by a flat belt from the front end of the camshaft, and a cellular radiator with a solid white metal casing are units of the cooling system. The exhaust manifold, with a discharge pipe at the front end, is cast as a unit with the square section, hot spot induction manifold. A dry single-plate clutch is fitted. In the four-speed gearset ball bearings are used for the main shaft and layshaft and plain bronze bushes for the reverse shaft. The central gear-shift lever moves through a visible gate, and a safety catch is provided for the reverse slot. The gears are of case-hardened nickel steel, and the constant mesh and third-speed gears are finished by grinding. The ratios are as follows: First speed, 3.84; second, 2.33; third, 1.45; fourth, direct; reverse, 3.84, with a rear axle ratio of 5 to 1.

The open tubular propeller shaft has fabric disk universal joints at both ends. The rear axle is of the three-quarter floating type of the pressed steel banjo pattern; the final drive consists of spiral bevels, while Timken compound taper roller bearings are used throughout. All brake drums are of 12 in. effective diameter with enclosed aluminum shoes. There are six sets of brake shoes, two sets in each rear drum, one being pedal-operated with the front set, and the other actuated by hand lever. Compensation is between the two brakes on each side by means of steel cables running over S-shaped levers on the cross-shaft. In addition to the individual adjustment at the end of each cable, there is a service adjustment on the pedal. The hand lever is on the right of the driver.

The steering gear, of the complete worm and wheel type, has three adjustments—one for end play of the worm, another for end play of the worm wheel shaft, and the third for mesh of the gears by means of an eccentric mounting of the worm wheel shaft.

Attached to the side rails of the frame are pressed steel brackets forming attachments for the body with extensions that support the running boards. Front and rear springs both are half-elliptic. The rear springs take both torque and drive and all are fitted with rebound dampers. The road wheels are of the spoked, pressed steel variety. The fuel tank, with a capacity of 10 Imp. gallons, is made of two steel pressings necessitating a single seam.



New 20 hp. Sunbeam standard sedan

In connection with the chassis lubrication system by grease gun, it is to be noted that every bearing near the center of the chassis is fitted with an extension pipe, bringing the point of attachment for the grease gun through the valance of the running board, while the rear shackle pins of the front springs have extensions into the engine space.

The windshield is a double panel sloping type with concealed brackets, the bottom panel being curved to follow the contour of the cowl. A polished mahogany instrument board is fitted and is set forward beyond the extreme rear edge of the cowl to give ample clearance for the knees of the front seat occupants. The board is provided with two large recesses for carrying small parcels and the instruments, grouped in the centre with a black finish and white dials, are illuminated at night by a concealed lamp.

The sedan is of the rigid framed type with sheet aluminum panelling below the elbow line, above which the framing is covered with black leather-cloth extending over the sides, back and roof. A double panel front shield is fitted, the top half being adjustable and having special locking screws that ensure a water-tight joint between the top and bottom glasses and prevent rattle. The rear light silk curtain can be operated by the driver, who thus can cut off light that may be reflected into his eyes from his windshield after it has passed from the headlamps of cars behind through the rear window.

The car has a wheelbase of 117 in. and a tread of 54 in. The chassis weight is 1850 lb. while the complete phaeton weighs 2800 lb. and the sedan 2900 lb.

THE FORUM

Overhead Valves and Silent Chain "Front-End" Drives

Editor, AUTOMOTIVE INDUSTRIES:

Is the automobile industry solving one of its apparently hopeless problems—overhead camshafts on a production basis? We have had overhead camshafts with us in racing cars for years, but up to now have not made them generally available.

Most automotive engineers will concede that there are certain advantages, both of a thermal and mechanical nature, to be gained by the use of direct-driven valves which open into the combustion chamber. The only reason they have not been used in passenger car work is the cost of the difficulties which offset the advantages.

These difficulties are of a nature which affect the desirability of the engine for normal passenger car use, and are also of a manufacturing nature. For racing cars, however, the disadvantages do not apply; and inasmuch as it is necessary in racing car practice to get every last bit of power output out of the restricted displacement, direct driven combustion-chamber valves are practically universal.

Racing cars, in which hand-fitting is the rule, and noise is not objectionable, have been able to take advantage of the thermal gain of the combustion chamber valve driven by the overhead camshaft; and have also benefitted by the reduction of mechanical losses in the valve drive. In other words, it has been possible in racing cars to use rotating parts to drive the valve system, instead of reciprocating parts. This has resulted in doing away with inertia and friction losses which are so detrimental to high speed engine output.

A Production Problem

Unfortunately, the overhead camshaft is not, or at least has not been, feasible from a production standpoint. As a problem in mechanical power transmission it is not difficult to design a train of gears that will operate an overhead camshaft, taking the drive from the crankshaft and transmitting it in the proper ratio to the overhead camshaft. To do this quietly, however, is something else. Some of the best engineers in the country have spent sleepless nights over this problem, not only ten or fifteen years ago, but within the last year.

With the demand on the part of the public for the utmost in the matter of power output from an engine of given displacement, designers in the higher price classes particularly have turned again to this problem.

Lapped or ground gears, working with accurate pitch-line contact, in a train as long as is necessary to transmit the drive from the crankshaft to the overhead camshaft, are difficult to produce. Even the factor of expansion enters into the matter with enough change in center distance between the first driving gear and the last driven gear, to give a serious alteration in the center distance. This is likely to mean noise.

Castings, unless seasoned with the greatest of care, will go out after they are in use for a time, with the result that an originally quiet gear train will be noisy. Since this situation is even encountered in the ordinary "front-end" drive with a side camshaft, it does not take much imagination to see how much greater are these difficulties when the distance between the crankshaft and the camshaft is so much greater.

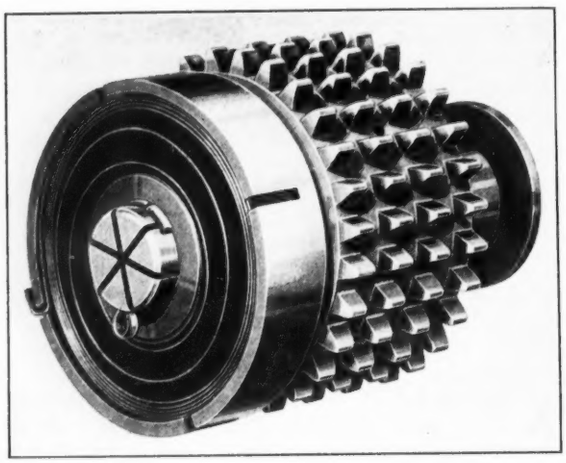
Used on New Car

At the automobile show this year a new car was introduced with an overhead camshaft. Coming at this time, when the problem of increased efficiency is before a large percentage of the automotive engineering fraternity, this is decidedly arresting. The most exhaustive tests, covering a long period, solved the question of thorough reliability of the new drive on this camshaft, and it is of great interest to review some of the considerations which led to its adoption, and the efforts made to forestall the unusual difficulties.

As followers of automobile design are aware, this engine uses a chain drive separated into two parts, for the overhead camshaft drive. This car and the drive have been described in this publication, and space will not be taken here to repeat the description. Suffice it to say that the drive employs two Link-Belt "back type" silent chains, the first chain carrying the drive to a sprocket on a mid-point idler or counter shaft, and the second from this shaft to the overhead camshaft. There are thus two drives, with their automatic adjustment sprockets, one for each of the chains, to keep the proper tension on the drive, and incidentally to perform another function which will be outlined below.

From the nature of the chain itself it would be evident that a quieter drive would ensue. The fact that the load is distributed over a greater number of teeth than is the case with gears, the absence of shock in the drive, the elastic nature of the chain, and the ability of the chain to absorb slight changes in the center distances without affecting performance—are

all factors which contribute toward the quietness of the drive. The presence of an oil film at each one of the chain joints gives a total oil cushion of considerable absorbing power, which also helps. On the other hand, taut chains at the front of an engine are like so



Link-Belt automatic chain tensioner

many violin strings, ready to resound to any vibration that happens to synchronize, or, in radio parlance, to "tune in" with them.

No matter how rigid a crankshaft is, it distorts to some extent under the blows of the explosions. The front crank being further from the flywheel, will bend further than the rear crank. The alternate blows and recoils of the shaft build up torsional vibration. At a critical speed this vibration is at a maximum. If it happens to tune in with the vibrations of the camshaft, the engine is rough indeed. If it should happen to tune in with the violin-string-like chain at the front of the engine, the result would be a strange and wonderful sound that would not make the car any too popular with its occupants.

This is where the automatic idlers come in. Within each of these idlers is a coiled spring. Every coiled spring has a certain natural period, of which the length of the spring and the tension upon it are factors. Inasmuch as the torque exerted by the crankshaft is varying at every moment, and even the flywheel effect of the entire car as it is traveling along cannot damp this out, the springs in the automatic idlers are constantly in action. The tension under which they are operating is constantly changing. Consequently, the natural periods of these springs are constantly changing.

The result of this constant change of period is that it is impossible for the crankshaft and the camshaft to be in resonance; vibrations are broken up as soon as they start. Thus the idlers perform the dual function of automatic adjustment and vibration damping. This damping effect is of the highest importance in an overhead camshaft drive, and must be secured by some method if the drive is to be quiet and the engine free from periods.

Frankly, the use of the silent chain "front-end" drive with automatic adjustment made possible the use of the overhead camshaft on a production basis, and so an interesting achievement is recorded. We may look for the further use of the overhead camshaft driving the direct combustion chamber valve, because of its proved advantages, a few of which are as follows: The elimination of a number of heavy reciprocating parts with their vibration factors (rocking couples); the elimination of gas pockets in the combustion chamber; the reduction of superficial wall area; and the increase of thermal efficiency, making possible higher output per cubic inch of displacement.

JAMES S. WATSON,
Manager, Drive Chain Division,
Link-Belt Company.

Brake Equalization

Editor, AUTOMOTIVE INDUSTRIES:

There appears in the August 26 number of *Automotive Industries*, on page 342, a letter in reference to the observation of George L. Smith, engineer of the United States Ordnance Company, regarding the conditions of brakes as indicated by marks on the pavement.

It is quite true that the average equalizer, as furnished by the motor car manufacturer will, if in good condition, equalize the pedal pressure to the brakes, but the individual adjustment of the brakes is the most important factor. The general condition of brakes should be improved and the present brake construction is capable of giving good service, but the bettering of the condition is dependable on several factors.

The reasons for the apparent unequalized condition of brakes, at the present time, is due to the lack of care on the part of the operator in having the unequalized conditions corrected, but in defense of the operator, many service station mechanics are not sufficiently acquainted with the brake constructions to know how to get the best results, and their usual practice is to make various adjustments until a reasonable degree of uniformity presents itself. In many cases the grease from the rear end has found its way to the brakes, thus temporarily changing the characteristics of each brake and destroying the linings through saturation with oil.

Many of the brake lining manufacturers, realizing the conditions that exist, have established brake service stations whose specialty is brakes, and with their wide experience they are able to keep the brakes of the average car in a safe condition, if given an opportunity.

While all materials have a varying coefficient of friction depending upon conditions, the apparent variation in the coefficient of friction of the average brake band lining is not so great as imagined.

The wrapping type of brakes, which are now quite common on passenger cars, are subject to the wide variation in efficiency due primarily to adjustment, and while brake lining and equalizers are occasionally blamed for variation in the holding power of brakes, if a careful observation is made of the brake problem it will be found that the greatest cause for variation is the individual adjustment of the bands themselves.

The added complication of pressure controlling devices for torque variation is not a necessity, as uniformity of braking action can be obtained and maintained over a considerable period with the present construction, and in view of the fact that the life of the occupants of the car and those on the street are dependent upon brakes, the writer believes that the suggestion made by the brake lining manufacturers and safety councils throughout the country, that brakes be inspected periodically, will eliminate the major portion of the brake difficulties experienced today.

H. COPLESTON.

Editor AUTOMOTIVE INDUSTRIES:

I have just read your article entitled "Incentive Wage Payment Plans for Indirect Workers Finding Wider Application," published in AUTOMOTIVE INDUSTRIES of September 30, and believe you have covered the subject pretty thoroughly.

I agree particularly with the paragraph in which you say that a long interval of time between effort and reward is objectionable. This is true of direct as well as indirect labor. If there is to be any general profit sharing, it is a greal deal better to distribute such profits in the shape of reward for definite achievements; rather than to pass it around to everybody on the basis of length of service or salary. Sometimes the method of measuring the performance of indirect workers may be somewhat elusive and indefinite; but if there is any way at all in which such efforts can be measured, there is an immediate good result from the mental effect on the workers if the subject is presented to them in a manner so that they can grasp the main essentials. The mental effect is very likely to be such as to result in individual striving to do more work per hour.

After all, when you analyze it all out, the purpose of giving a reward to workers of any kind is to stimulate their mental activity—make them desire to work rather than to loaf. The problem is to get a measurement of the amount of work done per employe hour.

On the other hand, I believe it is objectionable to apply incentives to employes who have to be kept on the payroll anyway and who cannot perceptively increase the amount of work done. Under this classification come watchmen, messengers, elevator and telephone operators, and some other types of workers. In some cases their efforts can be stimulated, but it becomes impractical to measure the amount of work done from any mathematical standpoint.

E. K. WENNERLUND,
General Motors Corporation.

Larger Engine Increases Speed of Cleveland Four-Cylinder Motorcycle

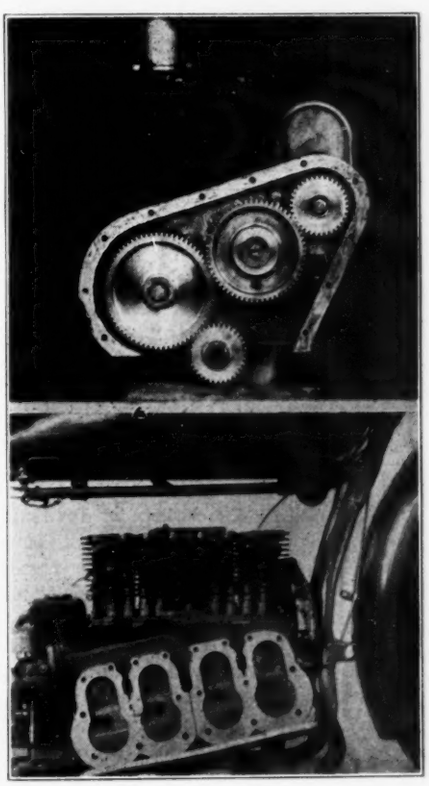
A LARGER engine with increased power features the 1927 Cleveland "Four" Motorcycle just announced. By increasing the bore 1/16 of an inch to 2¾ in. and the stroke ⅜ in. to 2 13/16 in., without changing the gear ratios at the various speeds, considerably more tractive power is obtained. The increased piston displacement and the use of larger valves, which are 1⅛ in. in diameter, have resulted in increasing the maximum speed from 60 miles to 75 m.p.h. This corresponds to about 5000 r.p.m. of the engine.

In addition to the increased bore and stroke, a number of changes have been made in the engine. The 4 cylinders are still cast en bloc, but they are joined only at the base and through the cooling fins; the cooling effect obtained being that of cylinders separately cast.

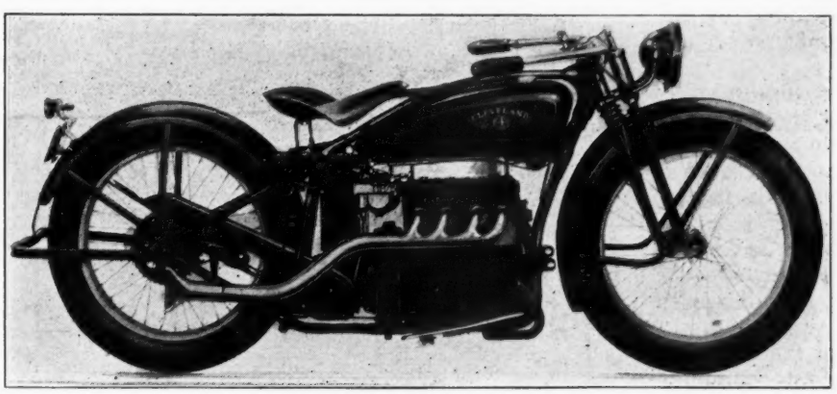
With the increase in power, the main and connecting rod bearing sizes have also been increased. These bearings are all 1 in. in diameter with the main bearings 1⅜ in. long and the crankpin bearings ⅞ in. long. The crankcase is of aluminum cast in two halves. The lower half is removable without taking the engine from the motorcycle, providing easy accessibility of all connecting rod and main bearings as well as of the oil pump.

The location of the magneto and generator unit has also been changed. It is now driven from the crankshaft gear, and is said to act on the crankshaft as a magnetic brake, decreasing noise of operation. A larger Schebler carburetor, which is now 1 in. in diameter, has been provided.

Changes in the chassis feature the addition of an emergency brake which is of the internal expanding type and is operated by the left heel. The service brake is still of the external contracting type, but the braking area has been increased. The tankage capacity has been nearly doubled and is now four gallons instead of 2¼ gallons. The tire size has also been increased.



RIGHT: *Magneto-generator drive is through the camshaft, thus producing what might be termed a magneto cam brake.* BELOW: *Combined cylinder head and manifold removed from Cleveland engine. Note large valves*

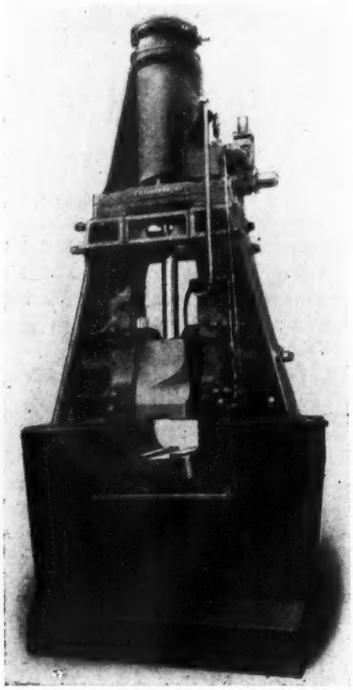


The new 4-45 Cleveland motorcycle

NEW DEVELOPMENTS—Automotive

Type B Steam Drop Hammer

A NEW piece of equipment for the drop forging plant, the Type B steam drop hammer made by the Chambersburg Engineering Co., Chambersburg, Pa., was introduced at the recent Chicago machine tool exhibition. This is a redesign of an earlier model embodying improvements designed to better maintain the alignment and reduce operating and maintenance costs. The 12,000-lb. size of hammer is illustrated herewith.



Chambersburg Type B steam drop hammer

All sharp corners have been eliminated from the anvil, and large fillets provided on the frame seats. A wearing wedge has been provided to permit of taking up wear between frames and anvil. By raising the seats of the frames to approximately the dividing plane of the dies, the tendency of the frames to rock has been materially decreased. Keyed heads in the anvil of the frame-to-anvil bolts are located above the floor line, and therefore are readily accessible.

The bearing surfaces on the bottoms of the frames have been increased by extending the frames from left to right. Where single tie-bars are standard, the tie-bar has been dropped below the top of the frame. The frames are tongued to the interlocking tie-plates at the top. The cylinder is of the Chambersburg self-draining design and is provided with a removable liner for economical renewal. A patented safety cylinder cover and a safety valve are standard equipment.

The interlocking tie-plate has been designed to eliminate overhanging, thereby reducing the hazard of breakage. This tie-plate is dovetailed to the frame in both directions, holding them in alignment, and is counterbored at the center to receive an extension of the throat of the cylinder, thus providing for the maintenance of cylinder alignment. The guides have been redesigned to be invertable as well as interchangeable, and the guide adjusting bolts have been provided with ratchets to lock them in position.

The cam and its arm are forged from the solid and the cam mechanism has been redesigned to eliminate all square ends and keys. Bearings of the cam and the valve rocker are bronze-bushed. Other features continued from the earlier type include a solid forged steel ram, universally adjustable guides and a two-piece, heat-treated rod. "Through" bolts have replaced nearly all of the studs, only some of the packing glands and the cylinder cover over the steam ports being held by studs in the new design.

Ring Gear Expander

THE Caloric electric ring expander recently developed by The Humil Corp., New York, for expanding fly-wheel starter gears prior to their being shrunk on fly-wheels, is said to produce absolute evenness of heat all over the ring and to be operated with great economy.

The ring expander employes the introduction transformer principle for developing the necessary heat in the ring. The machine consists of a transformer with the top member of the core hinged so that the ring can be placed over the vertical core when the ring becomes the secondary of the circuit.

No hold down screws or other mechanical devices are used for locking the top member in position with the transformer closed, but it is held in close engagement magnetically. This is said to result in efficient and practically noiseless operation. The rings are heated evenly at a pre-determined temperature and warpage,

Caloric electric ring expander opened for insertion of ring gear

Parts, Accessories and Production Tools

with accompanying losses, is claimed to be eliminated.

Gear rings measuring 15⅝ in. outside diameter and weighing about 5 lb. are heated to 500 deg. Fahr. with the following results:

	Volts	Amperes	K.V.A.	Watts	Time
1 ring	216	35	7.5	5500	40 sec.
2 rings	216	30	10.8	8000	60 sec.

The machine is 18½ ft. long, 40 in. wide, weighs 850 lb. and has a capacity of 12 K.V.A. Rings up to 30 in. diameter and weighing up to 200 lb. have been heated successfully with it. Heat treating up to 1000 or 1200 deg. Fahr. can be done. The machine can be furnished with or without pyrometer control.

New U. S. Electric Grinders

THE United States Electrical Tool Co., Cincinnati, O., has recently developed three new devices, a heavy duty, four ball bearing grinder; a heavy duty, four ball bearing, adjustable speed grinder, and a wall bracket for the company's Type Q electric drill.

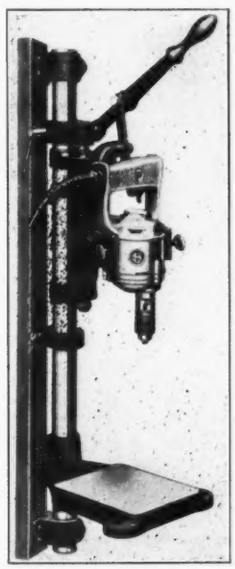
The heavy duty grinder is built in six sizes, from 5 hp. to 15 hp. inclusive, and is designed to withstand continuous heavy production service under the most severe conditions. It is claimed that vibration has been completely eliminated, thus providing for long service.

The adjustable speed grinders have the same general specifications as the heavy duty grinders, and are designed so that adjustment of the guards to the wheel-wear automatically regulates the speed of the motor so that the peripheral speed of the wheels is constant regardless of the wheel diameters.

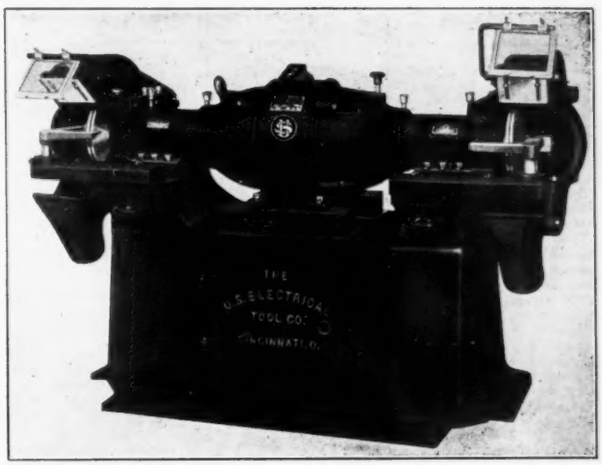
On alternating current starting with a 24 in. wheel at 900 r.p.m. which would give a periphery speed of about 5500 ft. the wheel can be used until it is worn to 18 in., at which time the next speed of 1200 r.p.m. will automatically cut in by moving the hand lever, thus bringing the periphery speed back to 5500.

Wall Bracket

The wall bracket is designed to take U.S. ¼ to 5/16 in. portable electric drills and is intended for use in places where bench space is limited. While in the grip of the bracket the drill may be raised or lowered or swung around on the vertical column and secured in any desired position by adjustment of the clamping screws.



Wall bracket for holding U. S. portable electric drill



U. S. heavy duty, four ball bearing, adjustable speed grinder

Pratt & Whitney D. L. Gages

ABOUT a year ago the Pratt & Whitney Company of Hartford, Conn., initiated a research program with the ultimate object in view of developing a cylindrical plug and ring material which, in combination with suitable heat treatment and the Pratt & Whitney special finishing process, would result in a very appreciable lengthening of the life of plugs and rings. The special finishing process referred to is a development of the same lapping process which is used on the P & W precision gages.

The results of this research work are crystallized in the P. & W. D. L. process gages, recently announced. These gages are made of an alloy specially manufactured for the purpose by a tool steel manufacturer. We are informed that tests with these gages in automobile plants, etc., have shown them to possess six times the life of other steel gages.

Roller Lock Strikers

A NEW roller type of door-lock striker has been marketed by the Soss Mfg. Co., Inc., of Brooklyn, N. Y. These strikers require no change in the lock. It is claimed that the lock bolt slides smoothly over the roller, permitting the door to close easily and quietly and obviating the necessity of slamming the door. The strikers are made in two sizes. The No. 220 has a 1¼ by 1 15/16 in. plate and a ½-in. roller, and the height from the bottom of the plate to the top of the roller is 11/16 in. This model is of all-steel construction, the roller being case-hardened. No. 221 has a 1⅜ by 1 13/32 in. plate and a ⅜-in roller, the height from the bottom of the plate to the top of the roller being 23/32 in. The plate in this case is a bronze forging, while the roller is case-hardened.

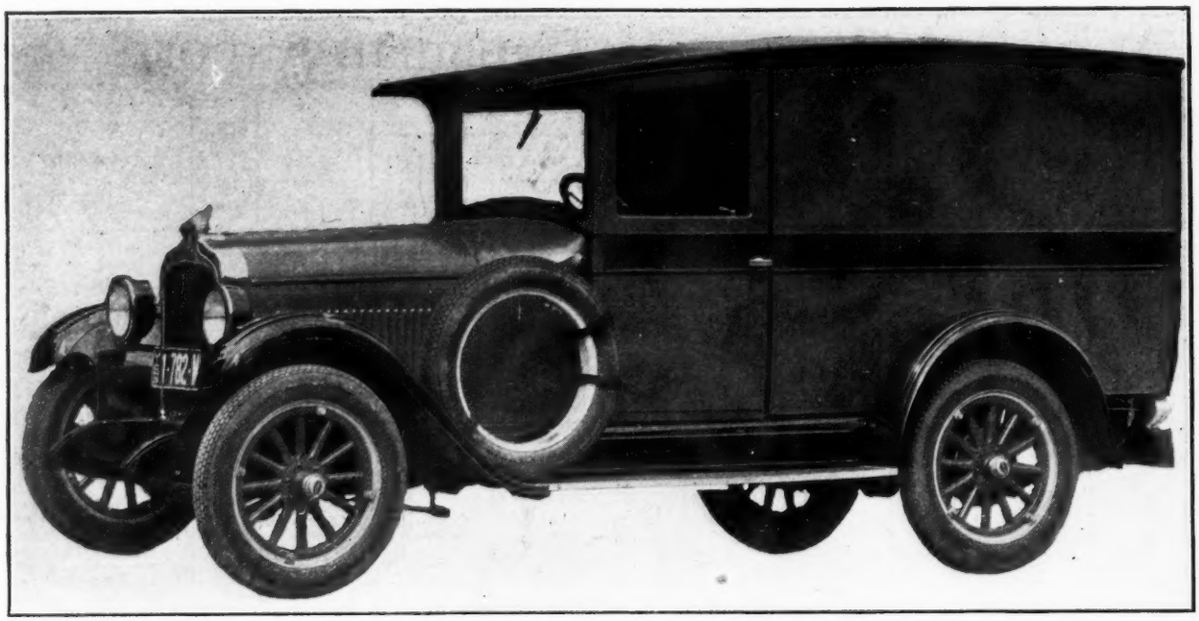
The Soss Company is also introducing hinges specially designed for flush-type open car doors. These are of such design that they are entirely hidden from view when attached.

U. S. Exports of Cars, Trucks, Tires and Parts

COUNTRIES	GASOLINE PASSENGER CARS										TRUCKS					
	Up to $500		$500 to $800		$800 to $1200		$1200 to $2000		Over $2000		Up to 1 ton		1 to 2½ Tons		Over 2½ Tons	
	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value
Austria							10	$14,886								
Azores and Madeira Islands	2	$1,040	3	$2,251							2	$1,067				
Belgium			60	44,326	268	$289,351	89	144,001	15	$36,200	191	78,684				
Bulgaria			2	1,569												
Czecho Slovakia			3	2,111	6	7,869	1	1,827	4	10,030						
Denmark	351	165,296	94	69,696	125	128,576	7	11,006	1	2,275	144	57,600	2	2,439		
Esthonia																
Finland	1	550	25	16,508	26	27,895	6	9,919					3	3,543		
France	5	2,647	13	9,492	39	41,326	7	12,643	18	50,024	14	7,161				
Germany	1	475	68	49,085	178	184,932	16	25,684	21	54,233	98	43,702	2	2,264		
Gibraltar																
Greece			3	1,965							2	708				
Hungary			3	1,876												
Iceland and Faroe Islands					3	2,987										
Italy	63	14,787			3	3,140			1	3,196			1	758		
Latvia																
Lithuania																
Malta, Gozo and Cyprus Isls	2	1,002			4	4,457										
Netherlands			26	17,488	29	26,503	4	6,522	7	18,223			27	36,496	2	5,430
Norway	14	7,770	32	22,774	17	17,994	8	13,701	3	9,430	1	731	11	12,833	2	7,895
Poland and Danzig							1	1,400								
Portugal	12	6,350	43	32,588	9	9,407	1	1,529			4	3,051	2	1,774	1	3,740
Rumania			4	2,710	12	12,361			2	5,000						
Russia											1	1,506	2	4,905		
Spain	72	19,975	99	72,860	181	191,649	34	52,913	24	64,131	36	19,930	18	18,305		
Sweden			201	146,688	72	78,378	34	54,764	7	17,500	22	16,077	16	16,971		
Switzerland			4	2,670			12	20,007	5	11,922						
Turkey			5	3,471	1	1,000										
United Kingdom	80	34,477	177	109,356	30	33,428	50	78,865	30	73,544	34	34,042	61	140,976		
Irish Free State			4	3,448	2	2,270					2	1,160				
Yugoslavia			15	9,582	6	5,701	1	1,555	1	2,500						
United States																
British Honduras	1	300														
Canada	354	84,486	1,752	1,019,565	532	513,571	147	221,693	92	234,972	115	78,483	127	182,970	16	44,943
Costa Rica	2	1,060			8	7,846					3	2,207	2	2,022		
Guatemala	8	2,736	11	9,175	7	7,637	2	2,781	3	8,200	12	8,212	6	9,440	2	4,150
Honduras	6	1,881	6	3,195	2	1,895	2	2,874			4	1,420	1	1,208		
Nicaragua	3	1,167			6	6,421	1	1,577			2	718				
Panama	8	3,127	15	11,294	18	19,061	2	3,288			10	4,388	1	721		
Salvador					5	6,046	4	5,917	1	2,500	5	4,958	6	9,182	3	8,795
Mexico	429	146,670	140	94,874	143	149,581	49	69,123	15	37,501	161	82,158	30	45,705	3	7,842
Newfoundland			6	4,070	8	8,084					2	799				
Barbados					1	983	1	1,410								
Jamaica	26	9,935	13	8,916	8	8,187	1	1,378			30	8,605	5	8,944		
Trinidad and Tobago	4	1,886	2	1,365												
Other British West Indies	4	1,693	1	800	3	3,057	1	2,000			4	1,607	1	1,492		
Cuba	251	90,639	91	59,169	67	65,959	16	24,431	17	44,260	116	46,995	39	57,740	6	17,244
Dominican Republic	75	34,314	10	7,156	16	15,649			3	7,958	30	12,272	10	7,461		
Dutch West Indies	1	555	3	2,074	5	5,357					11	3,493				
French West Indies																
Haiti	6	2,120	1	677	5	5,031					18	6,291	1	1,164	2	3,882
Virgin Islands	2	538														
Argentina	207	98,567	70	48,482	238	232,211	50	72,682	4	15,421	4	4,091	19	25,331	29	80,550
Bolivia			2	1,678	2	2,360	1	1,610	3	8,187			4	6,200	1	1,941
Brazil	462	180,929	226	174,593	148	147,857	57	85,021	22	57,455	315	125,232	15	13,209		
Chile	24	9,801	21	14,931	21	20,181	2	2,902	7	17,500	8	6,666	41	63,238	3	17,217
Colombia	12	4,358	28	19,401	22	23,259	7	10,979	3	8,790	24	13,806	68	127,851	14	57,238
Ecuador	3	1,062	1	750	1	974										
British Guiana					1	968										
French Guiana																
Dutch Guiana	2	708														
Paraguay	3	1,062	1	731							10	3,269				
Peru	40	13,351	7	4,871	26	25,832			2	5,000	22	9,851	44	47,873	1	3,215
Uruguay	25	10,184	35	26,683	31	32,074	9	14,575	4	10,000	14	5,932	9	15,024	1	7,600
Venezuela	16	6,232	62	44,906	78	81,186	11	16,445	6	15,586	31	18,489	66	110,814	2	7,893
Aden																
British India	4	1,920	83	60,379	45	49,389	5	8,142	1	2,723	95	67,462	15	18,857		
Ceylon	2	960			3	3,570					12	11,390	7	9,836		
Straits Settlements	7	3,360	4	2,970	34	34,684					5	5,047	3	4,830		
China	38	15,488	26	18,202	32	31,770	4	5,989			12	3,600	12	12,884		
Java and Madura	25	12,774	58	42,901	22	20,979	1	1,615	8	21,732	16	13,043	14	22,869		
Other Dutch East Indies			45	36,259	6	6,142	3	4,320	4	9,970	3	2,488	3	4,018		
Hejaz, Arabia and Iraq	6	2,100	11	8,166	2	2,062	7	9,968			2	1,461				
Hongkong					3	3,160										
Japan	26	10,085	28	21,720	45	46,634	1	1,410	4	18,535	2	1,537	2	2,756		
Kwangtung	64	22,350	10	7,209									14	14,315		
Palestine and Syria	1	440	28	19,942	15	15,288	4	6,490			6	4,847	1	975	8	49,569
Persia	19	7,429	2	1,486	3	3,489					3	2,260				
Philippine Islands	229	90,838	127	93,870	53	57,689	16	25,436	6	21,306	41	13,917	17	28,365	3	6,558
Siam	1	480											4	3,517		
Turkey																
Other Asia																
Australia	1,993	797,520	941	633,534	400	452,702	105	169,096	6	16,648	1,045	543,990	93	111,260	50	155,975
New Zealand	124	57,274	225	160,882	488	513,760	58	87,213	8	21,466	1	733	40	58,482	8	19,748
British Oceania	1	500	12	8,566	1	1,108					1	500	1	1,326		
French Oceania	1	378	1	700	1	900					2	738				
Belgian Congo	3	1,665									130	39,456	2	1,219		
British West Africa	4	2,220			1	1,073	1	1,409			26	29,131	19	20,292		
British South Africa	307	117,565	331	227,134	344	363,847	11	17,452	1	2,400	111	53,055	14	16,702	1	1,941
British East Africa	10	4,605	8	5,920	48	51,329	5	7,891			7	5,275	2	2,395		
Canary Islands			2	1,455	8	7,919					1	645				
Egypt	14	6,479	59	40,518	26	26,548	3	4,667	4	11,059	10	5,115				
Algeria and Tunis			1	867												
Other French Africa	22	7,691	9	6,645							43	17,631	5	4,965		
Italian Africa																
Madagascar																
Morocco	2	676			1	904										
Portuguese East Africa	3	1,515			20	23,800	1	1,410								
Other Portuguese Africa	2	752														
Total	5,485	$2,130,794	5,399	$3,581,195	4,014	$4,179,237	869	$1,344,416	363	$957,377	3,076	$1,538,682	908	$1,318,716	158	$513,366

Canadian Exports for August, 1926

ELECTRIC VEHICLES		PARTS	TIRES						PASSENGER CARS						TRUCKS		PARTS	COUNTRIES
			Casings		Inners		Solids		Up to $500		$500 to $1000		Over $1000					
No.	Value	Value	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value	Value	
		$5,518	220	$4,570	131	$378			4	$1,960								Austria
		1,377	60	575	77	133												Azores and Madeira Islands
		63,336	1,359	27,911	380	2,090			10	4,900	2	$1,720	12	$15,246			$380	Belgium
		493	34	529	28	69												Bulgaria
		4,879	997	21,347	707	1,745	84	$3,711									337	Czecho Slovakia
		100,732	1,315	16,070	622	1,857	29	973			8	7,878	17	21,624			581	Denmark
		130																Esthonia
		32,222	1,000	25,500	937	3,293	1	33									90	Finland
		69,802	227	1,913	12	38					3	2,550	2	2,875				France
		96,749	3,113	59,396	2,013	5,271	1	31					15	20,223			383	Germany
		2,933																Gibraltar
		3,148	373	7,016	45	130	65	1,511										Greece
		1,171	50	693	20	85												Hungary
		171	66	1,444	100	225												Iceland and Faroe Islands
		9,426	781	9,517	464	692												Italy
		1,329	34	710	20	42												Latvia
		114	15	224	15	40												Lithuania
		2,755																Malta, Gozo and Cyprus Isl.
		34,129	2,551	50,965	1,977	5,200	12	411										Netherlands
		13,797	797	16,505	820	2,132	14	580	2	980	5	3,698	3	3,786				Norway
		592	45	783														Poland and Danzig
		5,793	1,053	16,042	770	1,775												Portugal
		7,836	290	3,851	346	805	2	79			18	10,644						Rumania
		261																Russia
		112,203	2,266	38,010	1,386	3,353	87	1,982										Spain
		49,450	3,401	68,169	2,414	7,446	9	618	15	7,040	36	20,716	2	2,736				Sweden
8	$5,904	9,216	1,285	30,006	1,191	4,337	42	2,788										Switzerland
		2,635	260	3,067	260	527												Turkey
		386,881	16,483	276,614	9,916	25,840	1,123	31,217	42	19,007	190	147,568	52	57,200			21,640	United Kingdom
		65,450															550	Irish Free State
		1,756	813	12,263	616	1,486	4	287	2	878								Yugoslavia
									13	4,020	3	1,909	2	3,300	2	800	12,942	United States
		368	32	569	20	65												British Honduras
3	6,840	2,787,469	4,448	44,161	3,403	6,193	93	3,041										Canada
		3,446	193	4,088	152	575	16	645										Costa Rica
		9,732	316	5,902	430	1,346	4	106			1	1,000						Guatemala
		4,427	180	3,893	193	574	40	2,754			2	1,206						Honduras
		738	50	762	202	556												Nicaragua
		8,335	451	8,424	314	1,028	11	350										Panama
		5,040	336	7,749	504	1,787	136	5,461										Salvador
4	3,808	105,831	6,663	89,955	3,658	8,124	191	5,891			1	971	5	5,745				Mexico
		1,584	184	2,229	162	304	7	158	5	1,952					9	2,742	3,103	Newfoundland
		1,436	28	409	14	34												Barbados
		11,068	32	298	14	64	33	850	8	3,316	2	1,535			10	4,388		Jamaica
		3,794	68	1,327	93	248			8	2,432								Trinidad and Tobago
		5,983	118	2,152	271	688	53	1,759	10	3,103	4	2,296			6	1,731	3	Other British West Indies
		66,867	11,298	125,849	4,688	10,421	617	23,486			5	4,900	7	8,557				Cuba
		18,685	1,012	16,385	477	1,342	10	359			3	2,980	4	4,761				Dominican Republic
		2,149	362	3,794	333	766			3	1,207	1	594						Dutch West Indies
		441																French West Indies
		9,388	138	4,209	217	768												Haiti
		709	69	912	162	322												Virgin Islands
		258,171	7,372	129,552	2,642	6,735	542	17,599	248	121,520	26	17,648	28	35,425			750	Argentina
		1,737	20	301	4	79							1	1,461				Bolivia
		191,107	3,834	43,825	4,845	7,505	205	4,898	17	8,330	9	7,800	17	19,190			328	Brazil
		67,491	202	4,881	222	407	2	134	6	2,940	1	740						Chile
		33,442	1,295	26,274	1,622	6,264	27	891	5	2,100	1	594	8	8,993			638	Colombia
		1,768	26	530	26	123												Ecuador
		1,109	54	922					19	6,158					2	507	243	British Guiana
		121																French Guiana
		41	2	27														Dutch Guiana
		3,395											1	1,498			9	Paraguay
		25,253	368	7,657	385	1,436	1	60			3	2,555						Peru
		38,972	1,517	19,580	1,107	2,326			58	24,400	13	9,205	3	3,994	20	9,609		Uruguay
		34,294	914	23,997	1,546	4,835	10	198	11	4,776			2	2,409	14	6,143		Venezuela
		2,840							3	906					2	567		Aden
		73,676	3,453	53,427	1,029	2,843	81	1,710	362	147,972	104	73,511	10	12,881	184	73,106	23,421	British India
		5,349	811	15,790	405	985	12	634	10	4,247	9	7,500	2	2,144	18	5,103	1,007	Ceylon
		46,392	1,098	17,283	362	841	85	2,296	1	426	1	892	3	3,297	52	22,410	12,131	Straits Settlements
		27,701	1,614	28,010	1,209	3,501	251	8,994	6	2,729	7	4,466					519	China
		15,078	1,531	25,090	2,342	5,704	136	4,496	138	51,425	31	28,627	22	24,990	59	19,245	12,931	Java and Madura
		6,227	155	1,392	115	196												Other Dutch East Indies
		4,868	175	2,148	480	878			10	4,900			1	1,491				Hejaz, Arabia and Iraq
		3,067																Hongkong
		163,875	3,561	42,545	1,995	3,663	235	4,241	18	8,820	73	57,125	27	32,866	22	9,598	2,357	Japan
		873	85	466	85	112												Kwangtung
		10,412	576	7,777	107	246			1	490							25	Palestine and Syria
		1,629	50	392	150	237			2	980								Persia
		56,015	2,496	41,987	456	1,097	85	3,252										Philippine Islands
		2,999	46	470	80	141	20	427	6	2,560							1,252	Siam
		459	100	1,231														Turkey
		271,973	1,306	25,400	274	809	292	16,112			4	2,716	5	6,923	51	13,257	11,874	Australia
		86,748	1,568	29,868	956	5,687	72	4,573	333	110,033	48	37,942	7	9,619	75	24,974	21,365	New Zealand
		2,715	12	144	15	26												British Oceania
		205	23	606	9	61	9	284										French Oceania
		1,492																Belgian Congo
		6,688	114	3,182	94	270			11	4,154	3	2,439	1	1,300	30	7,550	16,141	British West Africa
		86,301	554	7,955	369	846	65	3,720	51	18,733	9	8,808	9	11,152	29	11,074	5,934	British South Africa
		12,319	212	2,856	144	283			21	8,081	4	3,785			4	1,764	14,498	British East Africa
		2,017	397	8,503	248	762	46	2,756	1	437			2	2,492				Canary Islands
		9,784	406	4,792	416	796	96	4,075	49	21,300	27	23,281	9	11,758	8	3,510	115	Egypt
		36																Algeria and Tunis
		1,632															129	Other French Africa
		1,356																Italian Africa
							4	220										Madagascar
		7,732	72	1,497	101	260			2	980	1	580						Morocco
		1,049																Portuguese East Africa
		540	110	1,998	272	1,018												Other Portuguese Africa
15	$16,552	$5,704,722	100,995	$1,599,112	64,682	$165,087	4,964	$170,730	1,511	$610,192	658	$502,379	279	$339,936	597	$218,078	$165,676	Total



The new ½ ton Pontiac Six delivery car

New Pontiac Truck Employs Standard Six-Cylinder Passenger Car Chassis

Light delivery car has pay load capacity of 1000 lb. and lists at $770. Embodies passenger car features.

GENERAL Motors' entry into the light six cylinder truck field with the new Pontiac Six delivery car listing at $770, marks the introduction of the lowest priced six-cylinder commercial car on the market. Among the special features of this new unit are the driver compartment which resembles the front interior of a sedan, integral body construction, Duco finish, and pleasing passenger car lines. The delivery car chassis is the regular Pontiac Six unit except for thicker leaf rear springs and heavy duty commercial balloon tires of the regular nominal size, namely 29 by 4.75 in. The rated pay load is 1000 lb., with the total body and chassis weight 2470 lb.

The front compartment of the new delivery car is almost identical to that of the Pontiac two-door sedan. Several standard Fisher parts used in the construction of the sedans are employed on the Pontiac commercial car and among these may be mentioned seats, "VV" windshield, instrument board and cowl, parts of doors and other fittings.

The panel body is of the composite type, employing one-piece side panels. Due to the use of steel braces, mortised joints and the special side panels, the body is unusually soundproof and free from vibration. The roof is covered with DuPont rubberized material. Drip moulding extends entirely around the roof while steel strips running lengthwise protect the hardwood flooring.

Duco finish in Balsam Blue body and wheels with a contrasting wide belt of bright orange extending entirely around the panel body, is offered. Interior dimensions of the load compartment are, length 69 in., height 46 in. and width 43 in. With normal load the height of the body floor is 25½ in. from the ground, while the capacity of the interior is 77 cu. ft.

Except for being upholstered in Fabrikoid, the two folding seats are identical to those utilized in the Pontiac two-door sedan. The instruments and panel are the same as used in the passenger model, while other items, like rear view mirror, cowl lights and radiator emblem, are standard equipment. The gasoline tank of 12-gallon capacity is slung from the rear of the body with the filler neck projecting beyond the side of the body. A gasoline gage is mounted next to the filler neck.

A COMMISSION appointed to study the problem of motor transport in Russia, made up of representatives of various government departments, has reached the conclusion that it is absolutely necessary to build improved roads and to raise the means necessary therefor. In addition to the grants by the Federal and local authorities, contributions for road construction purposes are to be made hereafter also by the Departments of Posts and Telegraphs and of War. It was decided at the meeting of the commission that the capital of the Autopromotorg company for automobile manufacture and trade in Moscow should be increased from 2.58 to 6.22 million dollars, that it should receive a long-term Government credit of 2.65 million dollars and be authorized to borrow 1.55 million dollars of banks.

EDITORIAL

The Five-Day Week

HENRY FORD and the American Federation of Labor have declared for a five-day week. During the next year or two we may expect millions of words to be written and spoken about a five-day week. Some of them will be to the point; many of them will fail to define exactly what is being talked about; and many more will miss consideration of a majority of the basic economic implications of the phrase.

Without being able to find any definite statements on the subject in the material so far published, we'll venture the guess, to begin with, that Henry Ford and the American Federation of Labor don't both mean the same thing when they speak of the five-day week.

Does a five-day week infer that both the production and wages for five days will be the same in the future as for six days in the past? Or does it mean that six days' wages will be paid for production equal to five days' production in the past? Or does it mean that six days' production will be crowded into five days, but that only 5½ days' pay at the old rate will be earned by the men under the new week? Or would it just mean, in many instances, that five days' pay would be given for five days' work, the extra day's output no longer being needed to supply the demand for the product?

Every time anybody begins discussing the five-day week, he'll have to define his terms pretty clearly or confusion is likely to exist in the minds of his listeners. If the A. F. of L. is talking about producing in five days what now it takes workers six days to produce, its past arguments about artificial restriction of output quantities to avoid fatiguing men unduly would seem to have to undergo some revision. If, on the other hand, the idea simply is to have men paid present six-day wages for present five-day production, the result—if the idea were universally applied—would seem to be simply higher prices and probably an actual decrease in real wage.

The eventual possibility of a five-day week in which men will produce as much as they now do in six days and receive for that production the same pay they now do in six days is not to be denied. The possibility of raising the standard of living—which means greater output per man—and at the same time decreasing working hours already has been proved in the reduction of the normal working day from twelve hours to eight or nine. But the point to which this theory can be carried is open to question.

And, as one of the most respected industrial authorities in the country remarked the other night when quizzed informally on this topic, "Why not continue to work six days and continue to raise the standard of living, rather than cut down the working hours and be satisfied with the present standard even if it can be done at this time—which is to be doubted?"

Perhaps the goal should be, not a maximum of leisure, but the working out of a more harmonious relationship between the man and the job, so that maximum leisure will not be necessary to the average man if he is to live life to its fullest. Interest in the job is the chief thing.

Chromium Hardening

COINCIDENT with the adoption of chromium plating as a decorative finish for trim parts including radiator shells, headlamp rings, etc., considerable interest has been aroused along the lines of using the same material in lieu of carbonizing and some other forms of heat treatment where surface hardness is the prime requisite.

There is almost no comparison as to hardness. While the average case-hardened surface may reach 90-100 points scleroscope hardness, chromium plate shows but the slightest scratch under the microscope after the regular sapphire needle test. Heretofore the properties of chromium plate have been appreciated but the difficulties of the plating operation were considered almost insurmountable.

However, chromium plating is being done commercially at this time and the plated surface is replacing heat treatment for surface hardness. One fan manufacturer reports excellent results with a considerable saving from chromium plating. An air brake manufacturer also utilizes chromium plating on the small parts in the brake operating linkage with good results.

In addition to the apparent possibilities in connection with tappets, brake pins, small shafts and even camshafts, the use of chromium plated crankshaft bearings in conjunction with the Chadwick type of bearing offers food for reflection on the part of automotive manufacturers.

Low striking ability is one of the drawbacks encountered thus far. While current densities of many times the magnitude of usual electroplating practice have been used, some difficulty in plating pieces of complex shape evenly has been experienced. Skeptics are as yet not thoroughly convinced that the plate will be entirely satisfactory under conditions of impact or highly localized rubbing loads, as encountered at the head of a mushroom tappet. It is a safe prediction, however, that in the near future chromium plating will supplant case hardening for many parts with a considerable saving.

AUTOMOTIVE NEWS SECTION INDUSTRIES

Philadelphia, Pennsylvania

Thursday, October 14, 1926

Large Late Year Business Keeps Factory Rate High

PHILADELPHIA, Oct. 14—In line with the seasonal trend, automobile sales are gradually declining and production is taking the same course. The market is still, however, above normal and there is now no reason to doubt that the record for the entire year will be well above that of any previous period in the industry's history.

Although there is a disposition in some quarters to fear the effects of possible market influences such as the Florida disaster, the floods in the central states and the decline in cotton prices, there has as yet been no serious reaction. Production schedules are generally being laid out with the view to meeting a normal winter market, though there is a tendency to keep inventories to the minimum so as to be ready for sharp curtailment if it appears necessary.

An extremely favorable factor is the condition of dealers' stocks. At the end of August these were at the lowest point in recent years, and while there have been moderate increases since then, it is not likely that total stocks represent more than three weeks' supply at current sales rates.

Production this year has ranged about 15 per cent above last, and sales in the corresponding ratio. But the increase has been almost entirely in the domestic market. Foreign business has failed to show the gains anticipated, due mainly to selling difficulties in Europe. Exports were this summer considerably under the level of a year ago, as in that period cold weather in Australasia and South America, the markets below the equator, restricts sales, and Europe was unable to take up the slack.

The used car market is in fair condition, after a period of summer selling that reduced stocks to a low point. There has been some increase since then, but not enough to cause unusual concern. The problem is, of course, still with the industry, but is not as grave as it appeared earlier in the year.

G.M.C. September Sales Increase Over August

NEW YORK, Oct. 14 — General Motors Corp. sales to dealers in September were 138,360, which compares with 134,231 in August and with 83,018 in September last year. Sales at retail in September were 118,224 as against 122,305 in August. Retail sales in September, 1925 were 83,519.

For the first nine months of the year sales to dealers totaled 996,591 which compares with 525,294 for the same period in 1925. Sales by dealers to owners for the first nine months total 962,295 as against 579,505 in 1925.

Plants at Capacity, Labor Survey Shows

WASHINGTON. Oct. 14—The automobile and tire industries are enjoying a high degree of prosperity, according to employment statistics and survey for September just announced by the U. S. Department of Labor. An analysis of the employment situation shows that these two industries have a considerably increased employment roll at the present time, compared with the volume maintained during the month of August.

Comparing the automobile industry with other industries the Department finds that it, with the iron and steel mills, are operating with full forces in almost every instance. "Automobile factories generally are running to capacity, with full forces employed, and in a few localities a shortage of skilled automobile workers is reported," the survey states.

Following are telegraphed reports on the industry from the principal automotive manufacturing and rubber centers:

Detroit: General employment conditions satisfactory. Most automobile plants working full time, none, however, overtime.

Flint: Automobile factories calling for tool makers, tool designers and skilled tool workers. All plants and accessory plants operating overtime and expect to continue this basis indefinitely.

Akron: During the past three weeks nearly every major rubber company of the Akron district announced increased production.

Indiana: Automobile factories in almost all instances are running at capacity.

Franklin Adds 3 Models

SYRACUSE, Oct. 11.—Three new custom designs, a sport roadster, a semi-collapsible top coupe and a Victoria coupe with covered rear deck are announced by the Franklin Automobile Co. These models were exhibited for the first time at the new show room which occupies 5000 sq. ft. of space on the ground floor of the company's general office building.

SEPTEMBER OUTPUT APPROXIMATES 410,000

NEW YORK, Oct. 11—September production of cars and trucks in the United States and Canada approximated 410,000, according to estimates available today. This compares with 439,653 in August, a decline of slightly over 3 per cent and with 334,709 in September, 1925, a gain of 22 per cent.

The total for the first three-quarters of 1926 is brought to about 3,670,097 vehicles, against 3,184,129 in the corresponding period a year ago, a gain of 15 per cent.

September car output is estimated at 364,900 and truck production at 45,100.

New York Registrations Show 22,000 Increase

NEW YORK, Oct. 13—Total new car registrations of the Metropolitan district for September, 1926, were 9760 comparing with 11,135 for the same area in August this year but exceeding September, 1925, when the figure was 8395, according to Sherlock & Arnold.

The total registration for 35 low and medium priced cars was 8724 as compared with 7485 for September, 1925, and 5751 for September, 1924.

The total registration for the first nine months of 1926, as applied to these cars exclusive of Ford in the Metropolitan area, was 93,124 as compared with 73,877 for the first nine months of 1925, 73,264 for the first nine months of 1924 and 66,612 for the first nine months of 1923. The total for all cars registered in the Metropolitan District for the first nine months of 1926, including 56 makes, was 103,166 as compared with 81,083 for the same period in 1925.

Detroit Shows 3000 Gain

DETROIT, Oct. 9—Passenger car sales in Wayne county, for September, totaled 6692 units, of which 5973 were closed automobiles. Passenger car sales for the first nine months of the year aggregate 66,799 compared with 63,782 for the same period a year ago.

Cleveland Sales Increase

CLEVELAND, Oct. 9—Cleveland automobile distributors sold 3407 more new automobiles during the first nine months of 1926 than for the same period in 1925 according to a compilation by Herbert Buckman, manager of the Cleveland Automobile Manufacturers and Dealers Association.

Goodyear Says Suit Move to Get Control

Defends Management Stock in Answer to Booth Action—Cites Business Gain

AKRON, Oct. 13—Management stock of the Goodyear Tire & Rubber Co., attacked in suits started in August against the company by Prosecutor G. Walter Booth of Akron, was declared to be in compliance with all Ohio corporation laws in an answer filed today in the Supreme Court at Columbus.

The Goodyear answer asserts that "Ohio laws do not require that stock in corporations similar to Goodyear, reorganized under the no par act, shall have par value of $5 or some multiple thereof," as the complaint contends.

The defense reviews the Laura L. T. Weiss suits, settled in Februrary, 1923, in which contentions similar to those upon which Prosecutor Booth bases his action were made. The brief asserts that the Summit County common pleas court entered an opinion at the conclusion of the Weiss suits, in which it was held that the management stock is "a valid lien on the assets of the Goodyear Tire & Rubber Co."

The Goodyear defense attacks the Booth action saying—"it was not actuated by an intention of protecting the public interests. It is rather a proceeding solely at the instance and suggestion of stockholders unknown to the company, in an attempt to obtain control of the Goodyear corporation."

Reciting the history of the company's reorganization, the briefs say that in 1920 the corporation found itself in serious financial condition, facing receivership or complete reorganization and refinancing. In February, 1921, the surplus of $9,000,000 the company had had six months before, had been changed to a deficit of $61,000,000. Debts and other obligations then totaled $125,000,000.

Cumner Joins G.M. Truck

NEW YORK, Oct. 13—A. B. Cumner, service manager of the Autocar Co., has resigned to take charge of the service department of the New York branch of General Motors Truck Co. Mr. Cumner had served with Autocar since 1908, holding positions as maintenance engineer, branch manager in several cities and latterly general service manager.

Accident Rate Held Low

WASHINGTON, Oct. 13—A survey just completed by the U. S. Department of Labor, based on 23 industries in 11 states, shows that from an industrial accident standpoint the tire industry is the most hazardous, while the automobile industry ranks fourth as being the safest. The safest industry from accidents was woolen goods manufacturers, carpets and chemicals, ranking second and third with automobile manufacturers fourth.

The figures show that in 1925, with an average payroll of 189,385 workers, 56 deaths occurred in the automobile industry; 704 permanent disabilities and 4247 temporary disabilities or a total "casualty list" of 5007 workers in the 73 automobile manufacturing plants. In the tire industry, 25 establishments, having an average of 20,097 workers in 1925, reported 4 deaths, 62 permanent disabilities and 3068 temporary disabilities, or a total of 3134 deaths and disabilities.

Tire Stocks Lower, Association Shows

NEW YORK, Oct. 13—Reflecting a high level of tire business, inventories were generally reduced by the rubber manufacturers in August, despite higher totals of production during that month. Shipments were the largest of any month of the year, it is shown by figures of the Rubber Association of America, Inc. Comparisons follow:

High Pressure Inner Tubes

		Inventory	Production	Shipments
Aug.,	1926	7,143,811	3,543,903	4,862,692
July,	1926	8,262,293	2,427,594	4,310,981
Aug.,	1925	5,006,578	4,588,385	5,257,509

High Pressure Cord Casings

		Inventory	Production	Shipments
Aug.,	1926	3,459,221	2,246,111	2,581,574
July,	1926	3,803,823	1,704,050	2,407,726
Aug.,	1925	2,895,254	2,409,070	1,999,548

Balloon Inner Tubes

		Inventory	Production	Shipments
Aug.,	1926	4,552,647	2,024,197	2,321,747
July,	1926	3,246,844	1,918,251	2,115,751

Balloon Casings

		Inventory	Production	Shipments
Aug.,	1926	3,116,440	2,020,347	2,167,943
July,	1926	4,686,819	1,869,089	2,037,276

The Rubber Association also reports September imports of crude rubber into the United States as 38,132 long tons, against 27,071 in September, 1925.

Dodge Names Stanton Foreign Sales Director

DETROIT, Oct. 14—D. T. Stanton, former district representative at Columbus, Ohio, for Dodge Brothers, Inc., has been appointed director of foreign sales succeeding Percy Owen, recently resigned. Mr. Stanton has taken over the new position.

The company also has appointed J. W. Hutchins used car manager, succeeding the late A. H. Schiapacasse.

Olds Opens Buffalo Branch

LANSING, Oct. 11—Olds Motor Works has established a branch in Buffalo under the direction of C. C. Lee, formerly assistant manager of the New York branch. No retail store will be operated in connection with this branch, all retail sales responsibility being reposed in the metropolitan dealer organization.

Business in Brief

Written exclusively for AUTOMOTIVE INDUSTRIES *by the Guaranty Trust Co., second largest bank in America.*

NEW YORK, Oct. 14—The outstanding financial event of last week was the publication of the official cotton crop estimate, followed by further marked weakness in prices of raw cotton. The estimate, based on condition Oct. 1, was for a crop of 16,627,000 bales, the largest in the history of the country. The price of spot cotton in New York declined from 13.10 cents a pound on Friday to 12.20 cents on Saturday.

The volume of general trade continued large last week, despite unfavorable weather in some sections and the depressing effect of the decline in cotton prices. At present the most optimistic reports come from the large industrial centers.

CAR LOADINGS

Car loadings remained practically at the peak during the week ended Sept. 25, numbering 1,182,940, as against 1,187,011 in the preceding week and 1,121,025 in the corresponding period last year. Net operating income of class 1 railroads in August amounted to $133,008,268, representing an annual return of 5.51 per cent on their property investment, as against 5.29 per cent in August, 1925.

BANK DEBITS

Bank debits to individual accounts reported to the Federal Reserve Board for the week ended Oct. 6 were 24 per cent larger than the total for the preceding week and 5.3 per cent above that of a year ago.

BUILDING CONTRACTS

Building contracts awarded last month in 37 states, as reported by the F. W. Dodge Corp. had a total value of $562,371,400, showing a decline of 6 per cent from the August total and a fractional decrease as compared with that of September, 1925. The decline from August was smaller than ordinarily occurs at this season.

FISHER'S INDEX

Fisher's index of wholesale commodity prices for last week is 147.4, comparing with 148.3 a week ago and 148.5 four weeks ago. The stock price index is 173, as against 178.9 for the preceding week.

FEDERAL RESERVE STATEMENT

Bills and securities held by the Federal Reserve banks declined $91,100,000 during the week ended Oct. 6, the principal change being a decrease of $93,000,000 in discounts. Deposits declined $70,500,000, while note circulation increased $14,500,000 and reserves $4,800,000. The reserve ratio rose from 72.6 to 73.7 per cent.

Money rates, after the large interest and dividend disbursements of Oct. 1, were easier last week.

Manufacturers to Back Plan for Listing Used Car Prices

Would Have Newspapers Carry Quotations Similar to Stock Listings—Success in Windsor Seen Opportunity for General Use

WINDSOR, ONT., Oct. 9—Many of the leading automobile manufacturers have endorsed the Border Cities Automobile Dealers Association's policy of price publicity as a method of solving the used car problem and will seek to have it adopted universally, declared speakers representing several companies who appeared at the association's annual banquet, last night.

A group of the large producers in the industry have spent several months giving careful study to the plan, and are so impressed with it that they will take steps at once to see that it is given a fair trial in the United States, perhaps on a larger scale than has been undertaken by the Canadian dealers.

Invitations to the meeting were extended to all dealers in Essex and Kent counties and a majority of them attended. They have had a good opportunity to observe the workings of the plan and have been so favorably impressed with it that they became associate members during the meeting so that they can share the benefits of the idea.

In opening the meeting, G. Tate Easton, president of the association, who has been given a great deal of credit for the adoption of the idea, outlined the workings of the plan and told how it had worked a great benefit to the members of the association. It has been so successful, he said, that the association desires to publish the selling price of used cars more frequently than once a month, a practice which has been pursued since the inception of the policy last spring.

"The Windsor Plan seems to be the best provision for the used car problem which has yet been placed before the automobile dealers of the Dominion of Canada or the United States, declared O. C. Hutchinson, sales manager of the Hupp Motor Car Corp., who was one of the principal speakers.

Advises Dealer Application

The speaker told how automobile manufacturers are continually confronted with the used car situation and declared that it is not a problem for the manufacturers to solve but that it must be worked out by the dealers themselves.

As a matter of suggestion Mr. Hutchinson suggested that the Windsor dealers might do well to advertise the lowest price they would pay for a used car. The plan as it is now working in Windsor is to publish the selling price of various used cars, in good condition.

"Your plan is primarily for educating the public as to the price the car is worth and you have done a splendid job," said the speaker in closing.

Henry Weaver, member of the advisory sales staff of the General Motors Corp., delivered an excellent sales talk in which he pointed out various problems confronting dealers. He concluded by telling of the study which the manufacturers have devoted to the Windsor idea. "We believe the Windsor plan is the greatest thing we have ever found to solve the used car problem," he said.

Many good things about the plan were said by B. G. Koether, of the General Motors Corp., who went more into detail on the study manufacturers have given to the idea.

12 Makers Favor Project

"This Windsor plan has been the object of particular study on our part for several months," said Mr. Koether. "We have since taken it up with 12 of the largest automobile manufacturers and the consensus on the part of these companies is that it is a good plan. It is the first constructive thing we have seen along this line, which is generally applicable.

"We feel you have gone a great way in educating the public as to the value of used cars and we are back of it. We are going to do our best to get this plan over in other localities. We are trying to get this thing over in one or more centers in the United States."

The speaker recalled how it is possible to pick up various publications and find the price of such standard commodities listed as stocks, bonds, iron, steel, produce and the like. Declaring that the automobile, which has now taken such an important place in the world is just as important to millions of families as the various items he mentioned, he cited advantages which would be gained if prices of used cars could be published in a similar manner in the metropolitan newspapers so that owners of motor cars could keep themselves familiar with the existing value of their cars.

"We are back of this. We think it is fundamentally sound and we are going to try and put this thing over."

Used Car Show Staged While Paris Show Runs

WASHINGTON, Oct. 9—A new wrinkle has been given the sale of second-hand automobiles by the French, according to a report to the Department of Commerce from the American Consul General at Paris.

There now is a Second Hand Automobile Fair in connection with the Salon de l'Automobiles in Paris, Oct. 7 to 17. All persons wishing to sell used cars can display them at the second hand exhibition hall by paying a rental, ranging from 30 to 50 francs a day, depending on the car's horsepower for floor space. Papers attesting each car's history must accompany the display. Mechanicians will be on hand to show off the operating power of the used stock.

Chicago Stocks Higher Reserve Bank Reports

CHICAGO, Oct. 9—Sales of new cars at retail in the Chicago district during August were 10.2 per cent ahead of sales in August, 1925, but 13.4 lower than in July this year according to report by the Federal Reserve Bank. New car stocks increased 6.1 per cent during August and were 15.8 per cent higher than on Aug. 31, 1925.

Used car sales in August fell off 15 per cent from July but were 13.6 per cent better than August, 1925. Used car stocks were 3.3 per cent lower than in July and were 40.4 per cent higher than in August, 1925. Deferred payment sales were lower than in either July or August, 1925.

Prohibition of Parking Not Solution—Jordan

NEW YORK, Oct. 9.—Prohibition of parking will not go down the throat of the American car-owning public, says E. S. Jordan in his report for the Traffic Planning and Safety Committee of the National Automobile Chamber of Commerce filed with the directors this week.

He points out that certain definite measures have been worked out which give an indication of how the problem can be handled. These are decentralization in large cities so that these become an assembly of smaller communities; parking on side streets and one way streets; private accommodations, and parking garages with moderate charges.

Make New Gasoline Gage

COLUMBUS, Oct. 9—The first consignment of electric gasoline gages, the invention of William B. Damsel, of Columbus, is being manufactured by the Columbus Auto Brass Co. The new gage can be adjusted to any size tank and is so arranged as to flash a warning light when the gasoline storage is less than two gallons. A dial on the dash shows the amount of gasoline in the tank. The Damsel Electric Gauge Co. has been formed to act as distributor.

Chandler Grows in Canada

CLEVELAND, Oct 11—Chandler-Cleveland Motors Corp. has increased its distributor organization in Canada 400 per cent over last year according to Sid Black, salesmanager. Sales show a 257 per cent increase.

Steel Mills Seek Increased Prices

Heavy Rail Orders Bring Up Unfilled Tonnage—Pig Iron Shows Upturn

NEW YORK, Oct. 14—Automotive consumers are specifying liberally against contracts placed previous to the recent advance in sheet quotations, but no representative business has been done so far at the new prices. With last Saturday's unfilled tonnage statement of the leading interest reflecting the heavy rail orders that began to be placed last month, encouragement was given to the heavy products end of the steel industry, and the immediate result was a more energetic effort on the part of hot-rolled steel bar producers to fortify the price position of this product.

Finishers of cold-rolled bars are showing determined resistance to this move. They declare that it is nearly impossible at this time to pass on the $2 per ton advance to automotive consumers of cold-finished bars, and that their own profit margin is too scant to permit of their absorbing the advance. While a third of the entire steel bar production enters into automotive consumption, the market is not so much influenced by automotive demand as is that for sheets, but cold-finishers are experiencing the same attitude on the part of hot-rolled bar mills as do sheet rollers in their dealings with sheet-bar mills, all primary mills now striving to control indirectly the market for secondary products. Automotive alloy steel mills have a very comfortable quota of orders on their books.

Pig Iron—The market has scored further advances, and is now on a basis of $18.50, valley, for No. 2 foundry. At this price level, blast furnace interests show eagerness to book first quarter 1927 orders which so far have not materialized in appreciable volume, the bulk of the current business being for November and December shipment.

Aluminum—London cables a break in the market from 118 to 107 pounds Sterling per long ton. This, however, has had no effect on the domestic situation, prices remaining at previously pegged levels. The market for remelted metal is active.

Copper—Reduction of prices on all copper and brass products of ¼ cent a pound by the leading fabricating interest followed another spell of weakness in the copper market. There are indications, however, that a reaction is about due. Domestic consumers are not long on supplies, and in London futures command a premium over spot, possibly in anticipation of a stiffening of the situation, once the American export combine begins operations.

Tin—The market is bare of spot metal, and famine prices are asked for deferred deliveries. In bearing metals and other alloys, as much as possible in the way of substitutes is being used.

Lead—Storage battery makers apparently look for further declines before committing themselves on a larger scale.

Zinc—Fair consuming demand is noted at the somewhat lower prices which prevail.

Rim Output Shows Drop in September

CLEVELAND, Oct. 11.—While there was a slight decrease in the total rim production of September as compared with the previous month, the output continues to show considerable gains over production during 1925 according to the Tire & Rim Association of America. During September this year the total was 2,365,518 and for the preceding month, 2,378,850. The total for the first nine months of 1926 is 20,054,248 as against 19,641,984 for the same period one year ago.

September production in principal sizes were as follows:

	Sept., 1926	Sept., 1925
Clincher		
30 x 3½	183,859	350,103
Balloon		
28 x 3½	1,023,683	541,467
28 x 4	270,834	288,381
29 x 4	240,693	181,587
30 x 4½	231,519	223,738
30 x 5	23,745	32,162
31 x 5	42,669	51,243
High Pressure		
30 x 3½	30,929	31,395
32 x 4	9,900	27,824
32 x 4½	32,550	73,797
Truck "20"		
30 x 5	117,464	122,169
Truck "24"		
34 x 5	2,000	8,519
36 x 6	6,813	8,986

Erskine Backs Inquiry Into Indiana Politics

INDIANAPOLIS, Oct. 11.—A. R. Erskine, president of Studebaker Corp. of America, has offered to head a financial committee to back investigations into alleged hidden control of Indiana political offices. The charges are made by Thomas Adams, publisher of the Vincennes Commercial, and head of a committee of Indiana publishers.

Mr. Erskine has been advised by the State attorney general that a grand jury investigation of the charges has been ordered.

The publisher seeks an investigation by the State senate.

To Make Diesel Engines

NEW YORK, Oct. 11—Construction of a new plant at Franklin, Ill., by the Chicago Pneumatic Tool Co., for the manufacture of Diesel engines is said to have been decided upon. Charles M. Schwab, a director of the company; H. A. Jackson, president, and W. H. Callan, vice-president, recently visited the site. Several hundred men will be employed. The plant will cost $500,000.

Chevrolet Sets High With 81,158 Output

Production for Nine Months Reaches 593,281—Schedule Averages 3381 Daily

DETROIT, Oct. 9—September saw the establishment of two new records by the Chevrolet Motor Co. By manufacturing 81,158 automobiles the company set a new monthly mark and attained a total production of 593,281 units for the first nine months of 1926, exceeding the 519,060 production for the entire year of 1925.

Production in September averaged 3381 cars a day for the 24 working days, which is also a new record. The year has also seen several monthly records established only to be shattered by succeeding periods. April, May and June with respective productions of 71,157, 74,617 and 77,241 each established production records. Production in July was restricted somewhat to allow tooling and other necessary changes to effect several improvements in Chevrolet cars. August production went to 76,551 units. It is interesting to note that Chevrolet's production, this year, is equal to the entire output of the company from 1912 to 1920.

Nash Says October to Show 50% Gain

KENOSHA, Oct. 9—The third-quarter net income of Nash Motors Co. was $4,643,658 after all expenses and State and Federal taxes, it was reported at the directors' meeting this week. This compares with $3,840,268 for the same period a year ago. Total earnings for the nine months of the 1926 fiscal year ending August 31, were $14,791,991 as compared to $11,133,411 for the corresponding period of 1925.

President C. W. Nash pointed out that while earnings for the third-quarter this year were somewhat under those of the second quarter, they were satisfactory in view of the fact that despite the unusual demand it had been necessary to arbitrarily curtail production during June and July to bring new models into manufacture.

The board declared the regular dividend of 50 cents a share quarterly and an extra dividend of 50 cents a share, both payable Nov. 1 to stockholders of record Oct. 20. Mr. Nash said:

"The product is meeting with exceptional popularity and though our September production was the greatest ever achieved for that month we were forced to carry over 3200 unfilled orders. The company has entered October with more orders on its books than it can fill although October production will surpass the best previous October by at least 50 per cent. As I view conditions there is every sound reason to anticipate continued good business.

Reading Would Use Buses on 248 Miles

Train Mileage of 321,163 Annually Would Give Way to Coordinated Buses

PHILADELPHIA, Oct. 13—In support of its application for a franchise to operate buses, the Reading Co., in a statement by its president, A. T. Dice, today said it proposes to place in service motor coaches which would cover 472,184 miles annually and would eliminate passenger trains which now cover 321,163 miles. Its motorcoach routes would operate over 248 miles of territory.

Inroads made by automobile and motor coach transportation into its revenues, particularly of its branch lines, have reached a point where continued operation of many of its local trains is an economic waste, the statement says. Under its plan motorcoaches would take the place of the lightly traveled trains, these to be operated on schedules coordinated with railroad schedules at main junction points, with interchangeable tickets, use of station facilities, etc.

In this way, says the company, the public endorsement of and demand for the motorcoach would be met and the operation would be in the hands of a management trained to its responsibilities, fully aware of the taxation problems of the future and long experienced in complying with public regulations.

Citing its right to the use of the highways, the company points out that 18 per cent of all the taxes received by the State during the period between 1915 and 1920 were railroad taxes. In this period the highway program of the State was actively begun. In opposing its application for a bus charter, the company says, the viewpoint is advanced that the railroads alone, of the taxpayers of the State, should be deprived of the use of the highways.

Hall Centers Lamp Works

DETROIT, Oct. 11—The C. M. Hall Lamp Co., which recently acquired control of the Edmunds & Jones Co., has sold its factory in Kenosha, Wis., to the American Brass Co., and will concentrate all its lamp manufacturing activities to the Detroit factories. The plant at Kenosha, which is located adjacent to another factory of the American Brass Co., will make it possible for the latter concern to extend its operations.

Teach Accident Prevention

NEW YORK, Oct. 11—New York University has inaugurated the first collegiate course in accident prevention for the training of industrial safety engineers and directors of public safety campaigns. The course is being given with the cooperation of the American Museum of Safety and all lectures dealing with any phase of mechanical guarding will be given within the Museum. Included in the membership of the first class are industrial executives, insurance inspectors, claim agents, bus transportation directors, safety council secretaries, industrial safety engineers and one physician.

Compulsory Insurance Sought in Maryland

BALTIMORE, Oct. 9—Despite opposition from State Highway officials, motorists, bonding and insurance companies, efforts to pass a compulsory automobile insurance law will be made at the next session of the Maryland Legislature. The movement is being agitated by a number of business and civic organizations here and throughout the State and a move for its enactment was made this week by the "Old Town" Merchants and Manufacturers' Association. A committee was appointed to draft the bill which would require motorists to provide indemnity against personal injuries and property damage caused by them.

The bill will be introduced in the Legislature next January, after it is approved in its final form by the organization at its meeting in November. Contention of both State and Highway officials as well as motor officials is that such measures tend to increase instead of decrease reckless driving.

Morse Increases Capacity

DETROIT, Oct 14.—Morse Chain Co. is adding a five-story building at the Ithaca, N. Y. plant which will furnish 123,000 sq. ft. more space for chain manufacture, and make possible an increase in output. The capacity of the Detroit plant, which manufactures sprockets, will be doubled by the addition of a two-story building. This new unit will house offices, engineering department, tool room and experimental laboratories. Space of the present plant will be given over to manufacturing, thus increasing facilities 100 per cent.

Triplex Opens Office

DETROIT, Oct. 11—An office has been opened in the General Motors Building here by the Triplex Safety Glass Co. of North America. G. H. Hunt will be in charge. The principal offices and factory of the company are at Hoboken, N. J. The company makes a safety glass which has been in use in Europe since 1914.

Chrysler "60" Reduced

DETROIT, Oct. 11.—Price reductions on the closed models of the Chrysler "60" line have been announced here today by the Chrysler Corp. The coupe now lists at $1125 which represent a reduction of $40 while the standard coach and sedan have been reduced $50 and now list at $1145 and $1245.

Six 1926 Show Cars Not in 1927 Exhibit

Ajax and Cleveland Will be Under New Names—Two to Make Debut

NEW YORK, Oct. 13—Passenger cars allotted spaces at the National show are Auburn, Buick, Cadillac, Chandler, Chevrolet, Chrysler, Davis, Diana, Dodge, Duesenberg, duPont, Elcar, Essex, Flint, Franklin, Gardner, Hudson, Hupp, Jewett, Jordan, Kissel, Lincoln, Locomobile, McFarlan, Marmon, Moon, Nash, Oakland, Oldsmobile, Overland, Packard, Paige, Peerless, Pierce-Arrow, Pontiac, Reo, Rickenbacker, Star, Stearns, Studebaker, Stutz, Velie, Whippet, Wills Sainte Claire and Willys-Knight.

Six cars exhibited last year have been withdrawn. They are Ajax, which is now the Nash light-six; Cleveland, now the Chandler light-six; Case, Gray, Lexington and Roamer. Additions to this year's list are the Duesenberg and Whippet.

The truck exhibit will include Atterbury, Autocar, Chevrolet, Commercial, Cunningham, Federal, Garford, Graham, Larrabee, Oakland, Reo, Republic, Schacht, Selden, Star, Stewart, Yellow-Knight, Walker and Ward.

Taxicabs allotted space are Dodge, Hertz, Oakland and Yellow.

Chandler Export Group to Extend Activities

CLEVELAND, Oct. 9 — Chandler-Cleveland Motors Corp. export representatives are preparing for extensive merchandising campaigns abroad and several are on their way or are planning trips to foreign countries.

After inspecting the new models at the Cleveland plant, R. L. Beardon, of the export department, sailed for Sao Paulo, Rio de Janeiro and Montevideo and will attend the Argentine Automobile Show at Buenos Aires in December.

P. C. Budd, European traveling representative, is now in Germany and will cover Switzerland, Spain and Portugal before leaving for London to assist at the Olympic exhibit in October.

J. J. Connelly, Australian traveling representative, has sailed from Vancouver for Australia and he will visit Chandler distributors in Sydney, Melbourne, Adelaide and Auckland, New Zealand.

J. W. Myers, Far East representative, is now in Manila after visiting distributors in China and Japan.

Export Trade to See A.E.A. Show

CHICAGO, Oct. 11—The Automotive Equipment Association has given out a list of 25 representatives of foreign automotive concerns who have signified their intention of attending the A.E.A. show at Chicago, Nov. 8 to 13.

Two Piston Sets With New Excelsior

Motorcycle Made Adaptable for Touring Conditions and for Speed Use

PHILADELPHIA, Oct. 12—The 1927 models of the Excelsior and Henderson motorcycles have been announced here. An unusual merchandising feature of the Excelsior is the supplying of two sets of pistons, one set of low compression, the other of high compression, to make each individual motorcycle adaptable for ordinary touring conditions and for hill climbing and track use.

Following modern trends, the valve gears on the Super Sport, Super "X" and Henderson models are enclosed. On the Supers the exhaust valve springs are housed in a cylindrical cover while on the Henderson both intake and exhaust valve springs are enclosed.

The mounting of the battery boxes on the Super Sport and Super "X" have been changed to increase accessibility and to provide more rigid mounting. The generator is suspended from the center instead of from one side. A fitting to enable the oil pressure to be varied from 1 or 2 lb. pressure to as high as 30 or 40 lb. now is part of the equipment on the Henderson, while a new design of Zenith carburetor is also used on this model, the chief feature of this carburetor being easy accessibility of the idling jet. Prices on all models remain unchanged.

Chinese Market Data Presented by Watson

WASHINGTON, Oct. 9.—Automotive and accessory exporters, interested in the Chinese market, will be afforded a first hand opportunity to secure data on that field from O. S. Watson, who has been United States Trade Commissioner in China for the past four years. He arrived in New York on Oct. 1 and after making his report to the Department of Commerce will go to Detroit and other principal manufacturing cities for interviews with manufacturers. Manufacturers interested in arranging an interview with Mr. Watson may do so through the automotive section of the Department of Commerce.

Assemblies Abroad Lower

WASHINGTON, Oct. 13—There were fewer American cars assembled in foreign countries during August, 1926, than during any previous month of the present year, according to figures being compiled by the Automotive Division, Department of Commerce. The August figure was 11,150, which was 1149 fewer cars than in July. The previous low month of the year was May, with 11,391 cars while the high month for all time was March, with 21,187 cars.

BUICK SELLS 57,100 IN FIRST 2 MONTHS

FLINT, Oct. 13—In its first two months on the market the 1927 model Buick has broken all sales records of former models. In this period 57,100 cars were delivered, exceeding the former record by 17,000. On the basis of the showing in August and September, E. T. Strong, general sales manager, predicts the new Buick will prove to be an even more sensational sales success than this year's car when 240,424 were sold.

Wolseley Halts Payments, Will Reorganize Company

LONDON, Sept. 27, (*by mail*)—At a meeting of the holders of the 6½ per cent first mortgage debentures of the Wolseley Motor Co. a suspension of interest payments pending a plan of reconstruction was agreed to, after some pointed criticism of the administration had been put forward concerning the heavy losses incurred since 1920. These losses, it was stated, necessitated the writing off of the whole of the ordinary share capital of £1,000,000 and a third of the preference share capital of £300,000.

Vickers, Ltd., which held the whole of the ordinary shares, is prepared to write them off altogether and to pay off a bank overdraft of £454,000 as well as to provide a substantial sum in exchange for new ordinary shares or other security in a reconstructed company. It is also intended to hand over the entire administration of the company to a new board of management concerning which negotiations are in progress. The suspension to which the debenture holders agreed will extend to Jan. 1, 1927.

G. M. in New Paris Arcade

PARIS, Oct. 1, (*by mail*)—General Motors this week inaugurated its new showrooms in the Arcade des Champs-Elysees, Paris. The location, in the Avenue des Champs-Elysees, by the side of the Claridge Hotel, is considered to be the best, and is probably the most expensive, in the city. Of the two showrooms on the Champs-Elysees, one has been secured by General Motors and the other is being rented by Citroen. A second arcade, higher up the avenue, near the Etoile, is now under construction. It will have one complete floor devoted to the automobile business.

N.S.P.A. Moves Offices

DETROIT, Oct. 14.—Having outgrown its present quarters, the National Standard Parts Association, through Executive Vice-President E. P. Chalfant, announces that on and after Monday, Oct. 25, the mail address will be 608-9 Empire Building, Detroit.

M. L. Wilcox Named New Combine Head

Corporation Will Retain Headquarters at Saginaw and Plans Extended Operations

DETROIT, Oct. 11—M. L. Wilcox has been named president of the Wilcox Products Corp., which was formed last week through the consolidation of Wilcox Motor Parts & Mfg. Co., Saginaw, and the Intra Steel Products Corp. of Detroit. The new corporation will retain headquarters in Saginaw and plans to extend its products and seek an increased market.

The officers of the corporation in addition to Mr. Wilcox are C. H. L. Flintermann, executive vice-president; M. A. Moynihan, treasurer, and A. B. Schall, secretary and assistant treasurer.

The directors are Mr. Wilcox, Mr. Flintermann, Mr. Moynihan, Carl Breer, Chrysler Corp.; G. R. Sink, Michigan Steel Co.; R. F. Flintermann, Michigan Steel Castings Co.; E. T. Hammond, Gemmer Mfg. Co.; F. M. Zeder, Chrysler Corp.; P. H. Grennan, C. M. Higbie and F. D. Nicol.

Yellow Truck Takes Over Boston Distributorship

BOSTON, Oct. 9.—The Yellow Truck & Coach Mfg. Co. of Chicago, has taken over the wholesale distribution of General Motors trucks and Yellow Truck & Coach products for New England handled until now by the Noyes Motor Truck & Coach Co. The factory officials have also taken over the operation of a Boston retail sales branch.

Harry K. Noyes, who is the Buick distributor in Boston, and for years has had the truck distribution for the territory, suggested some time ago to Vice-President P. L. Emerson, of the General Motors Truck Co., that in view of the fact that various truck companies now were operating direct factory branches here the General Motors people would get its full share of commercial vehicle business if it followed a similar policy. So the negotiations were completed to take it over on Oct. 1.

W. H. Moore, who has been very successful in commercial vehicle merchandising at New York, has been brought to Boston as manager of the new branch which is operating in the same building used by Noyes.

5th Avenue Adds Coaches

NEW YORK, Oct. 9.—The Fifth Avenue Coach Co. has put on the streets 22 of its fleet of 45 new double decked motor coaches. The coaches having a seating capacity of 55 passengers each. They were constructed in the company's shops here. It is expected that the last of the coaches will be finished and put into service before the end of this month.

Men of the Industry and What They Are Doing

Whalen Vice-President of General Motors Export

Under recent changes in the personnel of General Motors Export Co., W. T. Whalen, formerly managing director of General Motors Continental has been made vice-president and acting general manager. W. H. Wallace, formerly assistant to the managing director of General Motors Continental, has been made assistant production manager, succeeding G. M. Beard, who has been made assistant to the managing director.

J. H. Latham, who has been in charge of the Alexandria office is returning to the New York office. Lee W. Tomlin has returned to the New York office for special work. W. J. Roberts has been transferred to the Buenos Aires office where he becomes assistant treasurer of General Motors Argentina.

Nash Promotes Luthi

Hans Luthi, who started work in the old Thomas B. Jeffery Co. plant at Kenosha, Wis., as an assistant foreman 20 years ago, has just received his latest promotion to the post of general superintendent of the Kenosha division of the Nash Motors Co., which took over the Jeffery works in 1916. Mr. Luthi succeeds John Bjorn, who retired Sept. 1 to spend his time in travel and recreation. He was Mr. Bjorn's chief aide for several years.

Perkins Leaves Ford Post

O. H. Perkins, for over two years manager of the Des Moines branch of the Ford Motor Co., has retired from that position. T. L. Holt, assistant branch manager, is in charge of the office until Mr. Perkins' successor is named. Mr. Perkins came to Des Moines from Milwaukee where he had been a plant assistant manager. He has not announced his plans for the future.

Clark Heads Sales Club

K. D. Clark of Buick Motor Co. has been elected president of the National Automotive Sales Club, which is composed of representatives of manufacturers soliciting the business of large operators of fleets of automobiles and trucks. J. H. Feeley, Autocar Sales & Service Co. is vice-president; G. B. Johnson, Martin Parry Corp., treasurer, and R. L. Sommerville, Electric Storage Battery Co., secretary.

Fortey Back at Factory

Harry W. Fortey, in charge of sales promotion for the Chandler-Cleveland Motors Corp. has returned to the factory after a two-months trip through Canada. He spent two weeks at the Toronto National Exhibition.

ENGINEERS STUDYING EUROPEAN DESIGNS

Automotive engineers are attending the Paris and London shows in even larger numbers this year than previously. With the advance of sales opportunities in the foreign markets, cars designed to meet European conditions are being studied with an eye to making American built cars of greater adaptability.

Among the engineers attending the shows are:

E. R. Evans, chief engineer of Rickenbacker Motor Co.; B. H. Anibal, vice-president and chief engineer of Oakland Motor Car Co.; O. E. Hunt, chief engineer of Chevrolet; E. W. Seaholm, chief engineer of Cadillac; E. A. De Waters, chief engineer of Buick; H. C. M. Stevens, chief engineer of Oldsmobile; W. E. Moyse, chief engineer, General Motors of Canada; W. J. Davidson, assistant executive secretary; E. M. Crane, technical assistant to the president; Kingston Forbes, body engineer of Buick; Harley Earl, body designer for Cadillac, both members of General Motors technical staff, and Capt. H. L. Towle, Duco color expert of the duPont company.

Chatfield Succeeds Warner

C. H. Chatfield has been appointed Associate Professor of Aeronautics at the Massachusetts Institute of Technology to take over the work of Prof. E. P. Warner, now Assistant Secretary of the Navy for Aviation. Mr. Chatfield, who until July 15 was chief airplane engineer of the Wright Aeronautical Corp., will also act in a consulting capacity with the Pratt & Whitney Aircraft Co. of Hartford, manufacturers of aircraft engines.

Names New Sales Heads

Due to the volume of sales of Hexdees, the Detroit Steel Products Co. is expanding its sales force in many territories. Among the recent additions to the field organization are Carl Stanley, operating in the Pacific northwest; L. G. Akers, in the bay cities of California; H. B. Hammerel, in the East; H. B. Mummert, with headquarters in St. Louis; R. L. Collins, with Chicago headquarters; F. M. Kenney, Jr., in metropolitan Detroit.

Gregg Joins AC Staff

David Gregg, engineer and former chief of the supercharger branch at McCook Field, Dayton, has joined the research staff of the A. C. Spark Plug Co. in charge of supercharger work.

Foreign Representatives to Entertain Executives

With membership composed of direct factory representatives of American automotive companies, the American Automotive Club of Paris reported a successful year at its first annual meeting just held in this city. H. H. Kelly, U. S. trade commissioner in Paris, was re-elected president, with C. G. Jerosch, of Goodyear Tire & Rubber Co., first vice-president, and W. F. Bradley, Chilton Class Journal Co., second vice-president. C. K. Powell, who was re-elected treasurer, reported the finances of the club in a satisfactory condition.

A "salon dinner" will be held on October 12 aboard a houseboat formerly belonging to Marechal Joffre and now moored in the Seine close to the automobile show. This undoubtedly will be the most important gathering of leaders of the American automotive industry ever held outside the United States, for among the guests will be Alfred P. Sloan, Jr., and other officials of General Motors Corp., J. G. Vincent, of Packard; H. H. Rice; M. E. Forbes and Charles Sheppy, respectively president and chief engineer of Pierce-Arrow; W. P. Chrysler and J. E. Fields, of Chrysler; Sir William Letts, John N. Willys and G. F. Bauer, secretary of the foreign trade committee of the National Automobile Chamber of Commerce.

Keys Resigns From Gabriel

W. C. Keys has severed his connection with the Gabriel Snubber Mfg. Co. which he has represented in Detroit for the past four and one-half years. He will continue his engineering work in automobile riding comfort in which he has specialized for the past 14 years, with headquarters in Detroit.

Haines Joins Mercer

W. S. Haines, formerly experimental engineer of Mercer Motors Co., has joined duPont Motors, Inc. with whom he will carry out some special sales and experimental work.

Brogan Named Counsel

G. W. Brogan, Inc., has been retained as advertising and merchandising counsel by the American Hammered Piston Ring Co., Baltimore.

Boyce Goes to Europe

Harrison Boyce of the Moto Meter Co., Inc., sailed for Europe this week. Mr. Boyce is interested in a new type of oil burner developed in England.

Unruh in Baltimore

Gilbert H. Unruh has been appointed representative of the Link-Belt Co. in Baltimore to take charge of sales and service in that territory.

Radio Instruments Measure Car Noise

U. of M. Investigators Develop Special Apparatus—Upholstery Absorbs Body Sound

DETROIT, Oct. 9—In determining the origin of sounds arising from chassis, bodies or plant machinery, new electrical resonance measuring instruments have been perfected which filter and record various noises accurately. Descriptions of these instruments were disclosed before the Detroit Section of the S. A. E. this week.

Floyd A. Firestone, assistant professor of physics, and his associate, E. J. Abbott, assistant investigator of engineering research, both of the University of Michigan, proved by experiments before 150 members and guests of the section that the hum issuing from a pair of gears running in mesh can be separated into two or more distinct tones.

By means of radio principled apparatus the intensity of each tone forming the fundamental note of the gears were calibrated and shown by a scale projected on to a screen simultaneously with a reproduction of the sound by a loud speaker. Through being able to measure the intensity of the various tones it is possible to arrive at the cause of certain noises and deduct a remedy to make for greater silence.

The paper "Sound and Its Measurement" presented by Mr. Firestone dealt with the elementary principles of sounds and noises, development of sound filtering apparatus, and the application of resonance measuring instruments to the automotive field. With regards to noises arising from automobile bodies, Mr. Firestone stated that by the use of special sound absorbing upholstery there is a smaller intensity of sound. In seeking to reduce body noises he recommended engineers using good sound absorbing material for the interior of the cars.

Accessory Makers Back Run

LOS ANGELES, Oct. 9—"Cannon Ball" Baker has just completed a cross-continent run in a Ford roadster with the engine sealed in high gear. The run was backed by a number of accessory manufacturers whose products were used on the car to make possible the performance and whose efficiency was demonstrated. The speed range was between 20 and 45 miles for the entire distance.

Survey Bromine Resources

WASHINGTON, Oct. 6—A survey of the world's bromine resources in connection with which an effort will be made to determine the extent to which ordinary gasoline may be ethylized, is being completed by Carl R. DeLong, chief of the chemical division of the U. S. Tariff Commision. If only 10 per cent of the gasoline now consumed in the United States were treated with ethylene bromine and tetraethyl lead, Mr. DeLong declares, 9,000,000 pounds of bromine would be required. This is nearly three times the maximum bromine production two years ago. The survey is expected not only to develop much of interest in connection with the future use of leaded gasoline, but may determine to some extent the future price of bromine.

To Seek Standards on Punches and Dies

WASHINGTON, Oct. 7.—Punches and dies are to be simplified and standardized as far as possible, as a result of a movement initiated here this week by Secretary of Commerce Hoover in his general standardization program. At his invitation a representative group of manufacturers of dies and punches met with him to discuss the reduction in sizes and varieties.

Those present at the meeting, which was presided over by Edwin W. Ely, were of the opinion that there was at the present an over-diversity in the number and sizes and varieties of punches and dies, and that a reduced list would adequately serve all normal requirements. With a view to framing a tentative Simplified Practice Recommendation to be presented to a general conference of automobile and other manufacturers, a committee was appointed to make a survey of the automobile and other die using industries, this committee to report back to the Department as soon as possible.

The committee consists of H. C. Hungerford, (chairman), Pratt and Whitney Co., Hartford, Conn.; Joseph Bischoff, Cleveland Punch & Shear Works, Co., Cleveland; G. W. Moreton, Consolidated Machine Tool Corp., of America, Wilmington, and F. E. Templeton, F. E. Templeton Mfg. Co., Lancaster, Pa.

Doyle-DaCosta Changes

EASTON, PA., Oct. 11.—Doyle DaCosta Mfg. Co., makers of electrical coil windings here, has changed its name as of Oct. 15 to Coilton Electric Mfg. Co. The change is made to better express the field of activity in which it is engaged. W. L. Doyle, president for the past 10 years, has resigned and has been succeeded by G. B. Sherry. An important expansion program has been instituted.

Gisholt Opens in Detroit

MADISON, WIS., Oct. 11.—Gisholt Machine Co. has opened offices in the General Motors Building, Detroit, which will be in charge of U. S. James, who has been the company's special factory representative in the Detroit district. He will be assisted by F. M. Long, A. S. Beckman, E. L. Addleton and W. S. Salmon.

S.A.E. Draws Program for Boston Meeting

Noted Authorities to Speak on Coordination Possibilities of Transportation

NEW YORK, Oct. 9—Prof. W. J. Cunningham of Harvard University is announced as the principal speaker at the dinner to be held in connection with the three-day transportation and service meeting of the Society of Automotive Engineers. The meeting is scheduled to be held in Boston at the Copley-Plaza Hotel, Nov. 16 to 18. Gov. A. T. Fuller also has accepted an invitation.

Speakers and topics at the general sessions of the meeting are as follows:

Motorcoach-Truck Railroad Session: Motor Coaches and Trucks in Railway Service, B. V. Crandall, Railway Review; Motor Coach and Railroad Operation coordinated, A. P. Russell, New England Transportation Co., Economics of Motor Vehicle Transportation Correlated with Steam and Electric Railroads, G. L. Wilson, Dean Wharton School of Finance and Commerce, University of Pennsylvania.

Maintenance Session: Fleet Maintenance, F. P. Freeman, Public Service Transportation Co., Maintenance with Especial Reference to Tool Equipment, A. H. Leipert, International Motor Co.

Freight Handling Session: Coordination of Railroad and Trucking Operations, F. I. Hardy, Boston & Maine Railroad; Coordination of the Container with Rail and Road Transport Facilities, W. P. Kellett.

Motor Coach and Truck Operation Session: Truck Operation, C. S. Lyon, Mortor Haulage Co., Modern Motor Coach Operation, G. T. Seely, Chicago Motor Coach Co.

Tire Session: Effect of Tire Equipment of Trucks and Motor Coaches on the Road, Thomas MacDonald, Bureau of Public Roads; Operators Tire Problems—Cushions, C. B. Veal, Overman Cushion Tire Co., Pneumatics, J. M. Linforth, Goodyear Tire & Rubber Co., Solids, J. C. Sproull, B. F. Goodrich Co.

Inspection trips to be made during the progress of the convention include a visit to the maintenance plant of the Standard Oil Co., Cambridge, and a visit also may be made to the Massachusetts Institute of Technology.

Omaha Road Plans Bus Use

MINNEAPOLIS, Oct. 11—The Omaha railway has drafted plans for starting bus service between Nicols and Minneapolis, thereby saving an hour's time for passengers who wish to come directly to Minneapolis instead of going by way of St. Paul. The proposed line would cover a distance of 14 miles. According to G. H. MacRae, general passenger agent, the idea originated with the Baltimore & Ohio Railroad which now runs buses from its Jersey City terminal into New York.

Waukesha Stock is Offered at $32

MILWAUKEE, Oct. 9—The Waukesha Motor Co., which has changed its capital structure from 20,000 shares of common stock of $100 par value to 100,000 shares of no par value, is offering 40,000 shares of the new common to investors at $32 per share, to yield about 7.81 per cent. In making the offering, the following facts concerning the company are given by Harry L. Horning, president and chief engineer:

The company has no funded debt or preferred stock outstanding. In every one of its 20 years of existence, save 1921 when it lost only $14,000, the company has earned net profit after liberal allowances for depreciation and development. It carries development, patents, patterns, designs, tracings and good will at $1. The balance sheet adjusted to reflect retirement of $252,800 of 8 per cent cumulative preferred stock, shows current assets of $1,833,375, including cash of $111,956, compared with total current liabilities of $319,329, leaving a net working capital of $1,514,046, and a net worth of $2,161,478, as of Aug. 1, 1926. Over 80 per cent of the assets are quick. Net income for the 12 months ended Aug. 1, total $5.97 per share. The last four years' earnings have averaged $3.41 per share, as compared with dividend requirements of $2.50 per share, which divided will be declared by the directors for the fiscal year ending July 31, 1927, payable quarterly, the initial dividend date being Jan. 1, 1927. Sales for fiscal year ended July 31, 1925, were approximately $3,000,000 and for the fiscal year ended July 31, 1926, were over $4,000,000.

The shares now publicly offered represent no new financing on the part of the company. They have been bought from individuals. There is no change in policy or managment contemplated. The control of the company rests in the hands of men who have been active in its affairs and responsible for its success. They will continue to retain control and will remain active.

Tire Manufacturers Sell Rubber on N. Y. Exchange

NEW YORK, Oct. 11.—In the first half-year of the Rubber Exchange of New York, crude rubber valued at $200,000,000 was traded in, according to the annual report covering the period from Feb. 15, when the exchange began operations, to Aug. 31. Total transactions were 37,401 contracts, equivalent to 93,503½ long tons, a substantial quantity representing purchases for actual delivery according to President F. R. Henderson.

Tire manufacturers have participated extensively in the trading, Mr. Henderson said, being able immediately to sell against their surplus purchases for near deliveries when tire business slowed down. Mr. Henderson estimated the 1926 consumption of rubber at 370,000 tons, against estimated imports of 390,000 tons. He said the supply of scrap rubber available for reclamation is approaching exhaustion.

Reo Extends Bus Division

LANSING, Oct. 9—The Reo Motor Car Co. has broken ground for a new unit for the bus and truck division. It will be 100 x 500 ft., two stories high and comprising 150,000 sq. ft. of floor space. The building will cost approximately $200,000 and is being built south of the present bus plant.

Equipment Business Lowers Gabriel Net

CLEVELAND, Oct. 11—Distributors of the Gabriel Snubber Co. opened their annual convention here today. Sessions were held at the home of Claude Foster, president of the company and at the Willowick Club. The distributor organization was recently increased by the addition of representatives in several more districts. Under the distributors there are 3200 dealers.

Discussing the future policy of the company, J. O. Eaton, president of the Eaton Axle Co. and a Gabriel director, said that although it is probable that regular dividends will be increased next year, the future policy of Gabriel will be the further upbuilding of its cash and securities position. Dividends will not be as liberal as they have been this year, Mr. Eaton said.

Earnings of the company for the year will be near the 1925 figure of $6.67 a share on the 200,000 shares of stock, according to Mr. Eaton. Any slight decline in earnings may be attributed in part to the sale of more snubbers for original equipment at contract and consequently at lower prices.

National Buys Premier

INDIANAPOLIS, Oct. 9—Premier Motors, Inc., which formerly manufactured Premier taxicabs, has been bought out by the National Cab & Truck Co., which is now manufacturing these taxicabs under the Premier name and in addition is also manufacturing National trucks. The former Premier Model D-4 taxicab which was manufactured by Premier Motors for the Majestic Cab Co. is now being manufactured by the Larrabee-Deyo Motor Truck Co. of Binghamton, N. Y.

Developments of the Week in Leading Motor Stocks

NEW YORK, Oct. 14—The stock market suffered a severe reaction during the past week which sent bullish hopes a-glimmering as the speculative community turned from figuring paper profits to figuring out margins. Margin clerks in brokerage offices who have been having a rather easy time during the steady advance in prices again became active and for the first time in many months, margin calls became an important part of the daily outgoing brokerage mail.

Considerable liquidation came into the market. In the early stages, the principal selling occurred in the pool stocks and specialties where substantial declines were registered. Later the better class of stocks were thrown overboard to protect weakly margined holdings.

There was a sharp contest around General Motors which developed into a complete rout of the constructive forces operating in the issue. The stock declined more than 25 points, wiping out more than half of the gain which had been made since it sold ex the 50 per cent stock dividend in August. There were no news developments to account for the decline, although the Street is now less sanguine over the prospects of a large extra dividend at the November meeting. The third-quarter earnings statement is expected to be published in the course of the next few weeks and according to well-informed quarters will show profits at an annual rate of well in excess of $200,000,000 or $25 a share on the stock. Operations, while at a somewhat lower level than in September when several divisions made a new high record, are still at a much higher rate than last year and the curtailment is in line of seasonal considerations.

Hudson, which ran up sharply early in the week in response to buying attributed to Durant interests soon lost the greater part of its gains and Chrysler, which also exhibited an advancing tendency under the sponsorship of a new group which is understood to have been accumulating the issue, also sagged off to former levels. Studebaker, which has been under pool sponsorship, lost all its previous gain. Nash Motors held firmly following publication of its third-quarter's earnings which showed a balance of $1.70 a share for the stock. It is considered likely that the current quarter will set up a new record in earnings with the prospect of bringing the balance for the common to around $8 a share, or double the $4 dividends now paid annually.

In the accessory issues, Timken Roller Bearing continued to be a strong feature and registered a new high. The other issues in this group as well as the rubbers held around former low levels for the year.—E. S.

Sales Alibis Create False Truck View

N.A.C.C. Members Told Sales Conditions Exaggerated—Rating Action Proposed

NEW YORK, Oct. 8—Current belief in the trade that small down payments and long terms in the sale of motor trucks is prevailing practice is the outgrowth largely of "the salesman's alibi" and the customer's story to the salesman, Edward F. Loomis, secretary of the motor Truck Committee of the National Automobile Chamber of Commerce, declared yesterday in addressing the Motor Truck Members' Meeting at N. A. C. C. headquarters.

Mr. Loomis said that his conclusions were based on interviews with many branch managers visited during his recent trip to a number of cities where he attended the hearings of the Interstate Commerce Commission.

Stories of ridiculously low down-payments and long terms were so prevalent at the outset, he said, that he began to suspect that they were very much exaggerated and subsequent investigation proved this to be the case. He believes that the situation can be very much improved, if branch managers generally will discount much of this propaganda.

Mr. Loomis reported to the members also on the results of his attendance at the Interstate Commerce Commission hearings and the participation of the N. A. C. C. in the meetings. The N. A. C. C. cooperated with many organizations in arousing public interest in the hearings, and assisted materially in stimulating attendance. There were from 150 to 500 interested persons present at every hearing, he said, and many witnesses were heard in each instance.

Testimony Not Hostile

There was virtually no hostile testimony against the truck from any source and no actually restrictive regulation was recommended. Proposed regulation reflected a desire for protection of the public against so-called "gyps," while shippers generally asked for regulation which would establish the financial responsibility of the truck operator and provide for insurance. There was no disposition toward rate regulation.

While testimony at the hearings disclosed that the railroads have lost millions of dollars in revenue it became evident to the railway executives and to the public that the greater part of the loss in passenger revenues is due to the use of the private passenger automobile, and that more than 80 per cent of the loss in freight has been due to the privately owned truck and contract trucks. The railroads are well aware, Mr. Loomis said, that this business never can be recovered and that legislation will not provide the answer.

The members of the Motor Truck Committee also listened to a discussion on a proposed safety code for trucks and truck testing by H. H. Allen, assistant mechanical engineer of the United States Bureau of Standards. His statements were based on some 400 tests of passenger cars and 400 tests of trucks. The results of these tests form the basis of a safety code which has been drawn up and submitted to conferences with Secretary of Commerce Herbert Hoover. No action was taken by the truck members on the code.

Carry Excessive Weights

Paul Moore, general manager of the Garford Motor Truck Co., talked on the subject, "Should Tonnage Capacity Ratings for Trucks be Discontinued?" Mr. Moore pointed out that truck ratings as used at present mean virtually nothing. The one-ton truck usually is designed to carry two or three tons and does so in ordinary usage and similar conditions attend the ratings applied to the larger sizes of trucks.

It was proposed that the N. A. C. C. supply State motor vehicle officials with guaranteed information as to the capacities of various trucks instead of permitting these officials to obtain such information from the various unreliable sources upon which they are dependent at present. The truck members recommended that action be taken along this line.

South Wins Honors in Truck Campaign

CHARLOTTE, N. C., Oct. 11—All five honors offered by the White Company in its annual summer sales campaign, conducted throughout the United States, were won by the Southern district, one of the five into which the country was divided, according to an announcement here by B. C. Crawford, manager of the Charlotte district office. The Southern district, composed of the states of North Carolina, South Carolina, Georgia, Florida, Alabama and Tennessee, won the sales campaign last year, Mr. Crawford pointed out, when he was emphasizing his assertion that the demand for motor trucks in this territory is tremendous, largely as a result of the steady industrial and commercial development.

Mr. Crawford's announcement said the recent collapse of the cotton market apparently is having no depressive effect on the demand for trucks. General business and industry is going ahead with confidence, he added.

Wright Receiver Named

FLINT, Oct. 9—Dissolution of the Wright Battery Co. is asked by officers of the company in a petition filed in Circuit court. The court has appointed W. A. Zimmerman temporary receiver. Assets are estimated at $26,175 and liabilities $61,155.

Financial Notes

Edward G. Budd Mfg. Co. is offering $3,000,000 7 per cent cumulative preferred stock at 97 and accrued dividend to yield about 7.22 per cent. Sales increased from $5,125,936 in 1916 to $24,743,359 in 1925. Present orders are at an annual rate of over $80,000,000. Net earnings for the eight months ended Aug. 31, 1926, were $1,757,165 or more than four and one-half times dividend requirements on preferred stock now to be outstanding. Net assets after deducting all liabilities other than capital stock are $17,280,637 or more than $207 per share of total preferred stock.

A. O. Smith Corp. reports for year ended July 31, 1926, net income of $1,727,000 after interest, depreciation, Federal taxes, etc., against $1,152,014 in previous year. On July 31, 1926, company had outstanding $1,723,400 7 per cent cumulative preferred stock and 100,000 no par shares common stock. The profit and loss surplus as of July 31 this year was reported at $6,266,000 as compared with $4,869,359 the year before. After retiring $225,000 of 6½ per cent bonds and $279,000 of the preferred, there remained an unexpended balance in the sinking fund of approximately $259,000.

American Chain Co., Inc., for six months ended June, 1926, shows net income of $600,114 after interest, depreciation, Federal taxes, etc., equivalent to $1 a share earned on 600,000 shares of 8 per cent cumulative participating class A stock and common stock. This compares with $625,425 or $1.04 a share on combined stocks in first six months of 1925. After payment of $2 per annum on common stock, both Class A and common stocks share equally.

Sterling Motor Truck Co., has declared the regular 2 per cent quarterly dividend on preferred stock. The concern, it is stated, turns out an average of 85 to 100 trucks a month and its annual business amounts to $6,000,000. Due to the seasonal lull, and in anticipation of inventory, production was slackened somewhat during August and September.

Fageol Motors Co. (California) shows gross sales of $1,332,211 for six months ended June 30, 1926, and net earnings of $88,289 before royalties but after reserve for inventory adjustments. Current assets were $1,221,801 and current liabilities $660,399. Company had outstanding on Dec. 31, 1925, $840,000 (par $10) preferred stock and $2,000,000 (par $10) common stock.

E. I. duPont deNemours & Co. has sent letters to the common stockholders notifying them that Oct. 28 has been fixed as the date for exchanging the present common stock of $100 par value for the new no-par stock. This is on the basis of two shares of the new for one share of the old.

Moon Motor Car Co. declared a quarterly dividend of 37½ cents, placing the stock on an annual dividend basis of $1.50 against $3 previously. The dividend is payable Nov. 1 to stock of record Oct. 15.

Ford Gains in Buffalo

BUFFALO, Oct. 9—The Buffalo office of the Ford Motor Co., reports a big September and the prediction is made that this year will show a distribution gain of 10,000.

Carolina Revenues Exceed Road Needs

RALEIGH, N. C., Oct. 9.—Revenues of the North Carolina government from gasoline and automobile license taxes are amounting annually to approximately $5,000,000 more than the total of $8,250,000 necessary to annually finance the state's $100,000,000 highway program, according to R. A. Doughton, of Raleigh, State Commissioner of Revenue. This state imposes a tax of four cents per gallon on gasoline.

Former Governor Cameron Morrison, of Charlotte, N. C., now is vigorously advocating in a series of addresses from the stump a proposal to issue an additional $40,000,000 in bonds for highway building purposes, to complete the work on which $100,000,000 already has been spent.

Developments in recent days indicated that the State Government already is giving consideration to the future use of this surplus of revenue over the needs of the highway commission. Part of it, at least, will be used, it now appears certain, to finance an additional highway bond issue, but $5,000,000 per year, it was pointed out will finance a bond issue much greater than the highway commission will need.

Pacific Air Line Starts

SAN FRANCISCO, Oct. 9—The Pacific Air Transport, Inc., has begun regular operation of mail, express, freight and passenger planes between Los Angeles and Seattle, with stopover at San Francisco, following completion of a number of test flights over the north-and-south route. A. E. Peterson, of Washington, D. C., assistant superintendent of the government air mail service, who was the first passenger over the new route, pronounced the new service a success. Vern C. Gorst is president of Pacific Air Transport, Inc.

Coming Feature Issues of Chilton Class Journal Publications

Nov. 4—Motor World Wholesale. Annual Marketing Issue

Dec. 10—Operation and Maintenance—Service Station Equipment Issue

Dec. 15—Commercial Car Journal—Good Roads Issue

Jan. 1—Automobile Trade Journal. Annual Show Issue

Jan. 6—Motor Age. Annual Show Issue

Jan. 15—Commercial Car Journal—New York Show Issue

Seek Cooperation Here in India Road Campaign

NEW YORK, Oct. 9.—H. E. Omerod, managing director of Ford Automobiles (India), Ltd., vice-president of the Western India Automobile Association and chairman of the Motor Truck Association of Western India, who is in this country in connection with the Indian Good Roads Campaign, is in Detroit this week where he will spend a few days before returning to Europe.

Mr. Omerod hopes to obtain American and European cooperation in the project. Large areas of India, which do not have rail service, will afford a splendid market for motor trucks and buses when good roads are available.

Buys Cincinnati Battery

CINCINNATI, Oct. 9—William Foley, former secretary of the Cincinnati Automobile Club, has acquired the complete control of the Cincinnati Storage Battery Co. As sole owner, Mr. Foley states, the company will start on a new program of increased production for the next twelve months, when it is expected to turn out 75,000 batteries for radio and automobiles.

Eldridge in Miller Sets Five Records

PARIS, Oct. 1 (*by mail*)—In a 91½-in. Miller on Montlhery track, near Paris, E. A. D. Eldridge has broken two world's records and five international class records for machines of this piston displacement. The distance of 50 miles was covered in 23 min. 22 89/100 sec., average 128.3 miles an hour, and 50 kilometres in 14 min. 46 94/100 sec., average 126.1 miles an hour. These two world's records were taken from Ortmans with a four-cylinder sleeve valve Panhard & Levassor.

The five class records are as follows:

5 kilometres in 1 min. 28 83/100 sec. (average 133.2 miles).

5 miles in 2 min. 5 9/100 sec. (average 133.2 miles).

10 kilometres in 2 min. 47 90/100 sec. (average 133.2 miles).

10 miles in 4 min. 31 75/100 sec. (average 132.4 miles).

100 kilometres in 30 min. 26 56/100 sec. (average 122.4 miles).

Eldridge intends to leave shortly for California, for he is due to handle a front drive Miller at Los Angeles on Nov. 25.

Can't Deduct Depreciation

WASHINGTON, Oct. 9.—Depreciation on an automobile is not a deductible item from one's income tax, according to decision rendered this week by the Board of Tax Appeals. The decision was made in the case of Arthur B. Chivers, of Atlanta, Ga., seeking to deduct from his 1925 income tax an item of $471 covering wear and tear on a passenger automobile.

The decision, however, relating to depreciation is not to be confused with upkeep, the Board having ruled previously that a passenger car used in one's business was such an item that the upkeep could be deducted from the yearly income. This is the final ruling on this point which has been much in dispute for several years.

Calendar of Coming Events

SHOWS

Brussels .....Dec. 4-15
Buenos Aires .....Dec. 7-20
Ninth Argentine Automobile Show, Palermo Park.
Cairo .....Feb. 15-March 15
First International Motor Show.
Chicago .....Nov. 8-13
Coliseum Automotive Equipment Association.
Chicago .....Nov. 8-13
Accessory Exhibit Armory.
Chicago .....Nov. 15-19
Hotel Sherman, National Standard Parts Association.
Chicago .....Jan. 10-15
Coliseum, American Road Builders' Association.
Chicago .....Jan. 29-Feb. 5
National, Coliseum, National Automobile Chamber of Commerce.
Chicago .....Jan. 29-Feb. 5
Annual Salon, Hotel Drake.
London .....Oct. 21-30
Los Angeles .....Feb. 12-19
Annual Salon, Hotel Biltmore.
New York .....Oct. 20-30
Electrical and Industrial Exposition, Grand Central Palace.
New York .....Nov. 28-Dec. 4
Annual Salon, Hotel Commodore.
New York .....Jan. 8-15
National, Grand Central Palace, National Automobile Chamber of Commerce.
Paris .....Oct. 7-17
Auto Salon, Grand Palais.
Paris .....Dec. 3-19
International Aeronautic Exposition, Grand Palais.
Ponce, Porto Rico .....Dec. 1-12

CONVENTIONS

American Gear Manufacturers Association, Semi-Annual Meeting, Briarcliff Manor, N. J. .....Oct. 14-16
American Road Builders' Association, Congress Hotel, Chicago....Jan. 10-15
American Welding Society, Broadway Auditorium, Buffalo .....Nov. 17-19
Associated Manufacturers of Fabric Auto Equipment, Inc., La Salle Hotel, Chicago .....Nov. 13
Automotive Accessories Association, Chicago .....Nov. 8-13
Automotive Equipment Association, Coliseum, Chicago .....Nov. 8-13
The Motor and Accessory Manufacturers Association, Credit Conference. Hotel Statler, Cleveland....Oct. 20-22
National Association of Finance Companies, Palmer House, Chicago .....Nov. 15-16
National Hardware Association of the United States, Ambassador Hotel, Atlantic City .....Oct. 18-22
National Standard Parts Association, Hotel Sherman, Chicago....Nov. 15-19
National Tire Dealers Association, Inc., Memphis, Tenn. .....Nov. 16-18

S. A. E. MEETINGS

Boston, Nov. 16-18, National Transportation and Service.

RACES

Dallas, Texas .....Nov. 11
Laurel, Md. .....Oct. 23
Los Angeles .....Nov. 25
Salem, N. H. .....Oct. 12